DIRECT TESTIMONY
OF
WILLIAM J. MCGLINN, P.E.
ON BEHALF OF THE
PORTSMOUTH WATER AND FIRE DISTRICT

In re: Application for Rate Relief

City of Newport Utilities Department, Water Division

Docket No. 3578

Q. Please state your name and business address.

A. My name is William J. McGlinn and my business address is 1944 East Main Road in Portsmouth, Rhode Island.

Q. By whom are you employed and in what capacity?

A. I am employed by the Portsmouth Water and Fire District (PWFD) and my position is General Manager and Chief Engineer.

Prior Experience

Q. Please describe your professional qualifications and experience.

A. I have been employed by PWFD as its General Manager and Chief Engineer for over fifteen years. My responsibilities include managing the PWFD's staff and day to day operations, performing engineering analysis and design, coordinating the activities of professional consultants, advising the elected Administrative Board and implementing the policy decisions of the Board.

I also served as an engineering consultant to PWFD from May of 1982 to October of 1988. During that time I advised the Administrative Board and the Maintenance Manager on the hydraulic operation and expansion of the water system.

Prior to being hired by PWFD, I was employed for eleven years by Maguire Group Inc., an engineering consulting firm located in Providence, Rhode Island. I was responsible for project engineering and management in the Environmental Engineering Division. At the time of my departure, I held the title of Senior Principal Engineer. My assignments during this tenure included the design and construction management of municipal and private water systems. In addition, I was responsible for water system hydraulic computer modeling and analysis, as well as water system troubleshooting and testing. While at Maguire, I was also involved in sanitary engineering and resource recovery engineering.

I am a graduate of the University of Rhode Island with a bachelor's degree in Civil and Environmental Engineering and have been engaged in water supply engineering and civil engineering for over twenty-seven years. (see Exhibit 1 - Resume)

Q. Do you have any professional registrations or certifications?

A. Yes. I am a registered professional engineer in the State of Rhode Island. I am also certified by the State of Rhode Island as a Class 4 Drinking Water Distribution Operator and a Class 2 Drinking Water Treatment Operator.

Q. Mr. McGlinn, do you have any professional affiliations?

A. Yes. I am a member of the Rhode Island Water Works Association (RIWWA). I served on RIWWA's Executive Committee from 1990 to 1998 and as its President from December 1993 to December 1995. I am presently the Chairman of the RIWWA Water for People Committee, serve on the Legislative Committee and have been the liaison for RIWWA to the Department of Public Utilities and Carriers (DPUC) on Dig Safe matters.

I am also a member of the New England Water Works Association, the American Water Works Association, the National Society of Professional Engineers, and the American Society of Civil Engineers.

Q. Have you previously presented testimony as an expert witness?

A. Yes. I have testified before the Rhode Island Superior Court and the Portsmouth and Tiverton Zoning Board's of Review on behalf of PWFD, and in the Rhode Island Superior Court on behalf of the Narragansett Bay Water Quality Management District Commission. I have also appeared as an expert witness before the Rhode Island Public Utilities Commission on behalf of PWFD. These appearances included expert testimony on water supply engineering, sanitary engineering and general civil engineering.

Overview

Q. Can you please describe your role in this proceeding?

A. My role in this proceeding is to coordinate the review of the Newport Water Department (NWD) rate case with PWFD's rate expert and attorneys and respond to data requests submitted by the rate case parties. I will also provide testimony on three areas:

- Description of PWFD and how it obtains its water from NWD.
- PWFD's dissatisfaction with the NWD rate filing.
- NWD treated water quality problems, specifically Total Trihalomethanes (TTHMs), that have resulted in PWFD receiving notices of violation of the Federal Safe Drinking Water Act on five occasions.

Q. Please describe PWFD and how it obtains its water.

A. PWFD is a quasi-municipal, governmental agency created by an act of the Rhode Island General Assembly. The purpose of PWFD is to provide drinking water and water for fire protection throughout its legislated service area - approximately ninety percent of mainland Portsmouth. PWFD is governed by a seven-member Administrative Board (Board), which is elected by the registered voters within PWFD's boundaries.

PWFD has its own transmission and distribution system, separate and apart from NWD. This system was built and funded by the PWFD ratepayers and taxpayers. PWFD has over one hundred twenty (120) miles of pipe, four (4) water storage tanks, two (2) pump stations, five hundred twenty-five (525) fire hydrants, six thousand one-hundred (6,100) service connections, and a three thousand (3,000) square foot administration and maintenance building. The PWFD services approximately sixteen thousand (16,000) people. In addition to the General Manager and Chief Engineer, PWFD has an Office Manager with a staff of two (2) office workers and a Maintenance Manager with a staff of four (4) maintenance workers and an engineering technician.

Q. What are PWFD's water supply needs?

A. The PWFD does not own any water supplies, but relies on the wholesale purchase of water to supply its system. PWFD buys all of its water from NWD and will continue to rely on NWD for all of its water for the foreseeable future.

PWFD purchased an average of four hundred eleven million (411,000,000) gallons of water per year from NWD during the last five (5) years. PWFD estimates that it will purchase four hundred twenty-two million (422,000,000) gallons or 1.12 million gallons per day (MGD) of water from NWD during the current PWFD fiscal year ending April 30, 2004. It is expected that PWFD's demand will increase at a rate of approximately 1.0% per year for the foreseeable future.

Q. Can you explain the current contractual arrangements with NWD?

A. Yes. The contract between PWFD and NWD expired on December 31, 1995. Negotiations that stretch back as far as 1992 for a new long-term contract have been unsuccessful. With the exception of water rates, which were established by the Commission in 2000, PWFD continues to purchase water as it had previously purchased water under the terms of the expired contract.

Q. Please explain how PWFD obtains water from NWD.

A. All of the water that PWFD purchases from NWD is drawn from NWD's 4.0 million gallon (MG) underground, treated water reservoir located at the Lawton Valley Water Treatment Plant (LV-WTP).

Pumps in the basement of the LV-WTP supply the 4.0 million-gallon reservoir with treated water through a NWD 24-inch main. This reservoir does not receive water from the Station One Water Treatment Plant in Newport.

PWFD draws water from the 4.0 MG reservoir through its own 16-inch suction main and pump station. PWFD's suction main is connected to a NWD 16-inch main at a point approximately 63 feet from the 4.0 MG reservoir.

In summary, by using its own infrastructure, PWFD is drawing water directly from the LV-WTP through the 4.0-MG underground reservoir.

Q. How do other NWD customers receive water from the Lawton Valley Treatment Plant?

A. The Navy has a 10-inch water main that draws water from the 4.0 MG reservoir and the 24-inch main from the LV-WTP. This Navy connection supplies only the Melville area of Naval Station Newport and it represents less than 6% of the Navy's total metered usage.

The NWD Lawton Valley Pump Station located on the LV-WTP site also draws water from the 4.0-MG reservoir and the 24-inch main from the LV-WTP. This pump station supplies the medium pressure zone of the NWD distribution system including the 2.0-MG standpipe at Lawton Valley. Those customers in the NWD medium pressure zone that receive water from this pump station, the 2.0 MG standpipe and the Newport transmission and distribution system include:

- the majority of the NWD retail customers in Middletown;
- all of the NWD retail customers in Portsmouth;
- a small amount of the NWD retail customers in Newport; and
- numerous Navy connections.

Q. Should the cost of the Lawton Valley Pump Station be allocable to the PWFD?

A. No. The cost of power, maintenance, capital expenses and debt service, if any, for this pump station is allocable to the distribution system and should <u>not</u> be borne by PWFD, as this facility is not used by NWD to supply PWFD.

Q. Does the PWFD receive any water from the NWD Station One treatment plant.

A. No. All of the water purchased by PWFD comes from the LV-WTP. The water from Station One generally supplies only the low service area in Newport. Although NWD can move water from its low service area (Station One water) to the medium service area (Middletown and the Navy), this water cannot reach PWFD.

Q. Are there any other NWD customers that obtain water service in a manner similar to PWFD?

A. No. PWFD is unique in that it has one connection to NWD and takes all of its water directly from the underground reservoir at the treatment plant using PWFD's own infrastructure to pump and transmit the water to PWFD.

PWFD does not utilize NWD's storage tanks or distribution system for any purpose, including peak hour demand and fire protection, but instead relies on PWFD storage tanks and distribution system for this purpose. In essence, PWFD relies on NWD to supply its maximum day demand.

Q. The Navy is a wholesale customer, don't they take water in a similar manner to PWFD?

A. No, the Navy does not. PWFD is significantly different than the Navy in the manner in which it takes water from NWD. The following comparison table illustrates the major differences between PWFD and the Navy.

ISSUE	PWFD	NAVY
Number of Connections	One connection to NWD and one meter to be read and billed.	14 active connections to the NWD and 14 meters to be read and billed.
Location of Connections	Draws all water directly from the 4.0 MG underground reservoir at the Lawton Valley Water Treatment Plant which is the least expensive of the two treatment plants to operate.	1. Draws less than 6% of its supply from 4.0 MG underground reservoir at the Lawton Valley Water Treatment Plant. 2. Numerous connections to the medium pressure zone in Middletown. The Navy is utilizing the NWD Lawton Valley pump station, the NWD 2.0 MG storage tank and the NWD transmission and distribution system for these connections. 3. Numerous connections to the low service system in Newport that are supplied by the more costly Station One Treatment plant. Utilizes the NWD low service area transmission and distribution system and storage for these connections.
Meters	PWFD owns, tests and repairs the meter per contract. PWFD has an independent consultant test this meter twice each year.	NWD owns, tests and repairs the Navy meters. In recent years, NWD has been replacing the Navy meters at NWD expense.
Emergency Connections	Has the ability to supply up to 1.0 MGD from PWFD gradient 360' to the NWD high service area gradient 334' through a jointly owned emergency connection on Mitchell Lane at East Main Road in Portsmouth.	No ability to provide emergency service.

Q. In general, how would you describe PWFD as a customer?

A. PWFD is by far the easiest customer for NWD to serve. PWFD buys the water directly from the LW-WTP system using its own infrastructure.

Q. Why is PWFD dissatisfied with this rate filing?

A. PWFD was forced to spend over $114,000 on consultants and lawyers in Docket 2985, because of the poor quality of the NWD rate filing and the excessive number of data requests required to establish a rate year and to develop a makeshift cost of service study. PWFD expected that the Commission's specific directives would set the stage for a thoroughly developed rate year, per Commission rules, and a comprehensive cost of service study by NWD for this filing. It appears from reviewing the filing with our rate expert, Mr. Christopher Woodcock, of Woodcock & Associates, that this did not happen and that the effort and expense of Docket 2985 may have been wasted.

Moreover, while meeting with Julia Forgue, on April 12, 2001, shortly after she assumed the position of Public Works Director for Newport, Ms. Forgue indicated that she had read the Report and Order for 2985 and was not pleased with NWD's performance. Our discussion left me with the impression that NWD was aware of the Commission's directives and would not repeat the same mistakes in its next filing.

Mr. Woodcock, with PWFD's authorization, worked directly with NWD consultant, Raftelis Financial Consultants (RFC) on two NWD dockets. Beginning in the summer of 2002 Mr. Woodcock advised RFC on PWFD's concerns relative to their preliminary work papers for Docket 3457, the flat rate filing that NWD subsequently withdrew, and later on their preliminary work papers for this docket. In addition, PWFD put together detailed calendar month water demand data for its system and provided it to NWD and RFC. Despite these efforts and costs, it appears that the concerns raised by Mr. Woodcock were largely disregarded and that the demand data was not properly utilized in the rate filing.

Furthermore, PWFD is disturbed that the TTHM water quality problems that it raised at a NWD Compliance Hearing before the Commission on March 4, 2002 have not been addressed in this filing.

PWFD has always been willing to pay its fair share of costs and would prefer to do so without an extensive rate making process. However, PWFD needs a resolution to the method or basis for properly allocating NWD costs so that PWFD, can be sure that NWD water rates are fair, reasonable and **predictable**.

PWFD also wants NWD to revolve the TTHM water quality problem for the benefit of all water customers on Aquidneck Island.

Q. Please describe PWFD's concerns about TTHMs?

A. The water that NWD sells to PWFD at its meter pit at the LV-WTP has varying, but frequently high levels of TTHMs. As a result, PWFD received a notice of violation of the Stage 1 Disinfection Byproducts Rule (DBPR) of the Federal Safe Drinking Water Act on five occasions, with the three most recent occasions being in the fourth quarter of 2002 and the first and second quarters of 2003. This rule is promulgated by and enforced by the United States Environmental Protection Agency (EPA). EPA issued a Federal Administrative Order to PWFD on March 10, 2003, which is attached as Exhibit 2.

Q. What are TTHMs?

A. TTHMs are volatile organic compounds that are the by-product of drinking water disinfection. The formation of TTHMs is the result of disinfection chemicals, such as chlorine, chemically combining with organic matter, such as decaying plant and animal materials, during and after the water treatment process. There are four Trihalomethanes (THMs) that make up the EPA regulated TTHMs. These are Bromodichloromethane, Bromoform, Chloroform and Dibromochloromethane. Chloroform is the most prevalent of the four THMs.

Q. Why does EPA regulate TTHMs?

A. EPA regulates TTHMs because of their suspected short and long term health effects. According to EPA, epidemiology and toxicology studies have shown a link between bladder, rectal and colon cancers and TTHM exposure. In addition, according to EPA, human epidemiology and animal toxicology studies report an association between chlorinated drinking water and reproductive and developmental endpoints such as spontaneous abortion, stillbirth, neural tube defects, pre-term delivery, intrauterine growth retardation, and low birth weight.

EPA's current health effects language for TTHM violation notices states: "Some people who drink water containing Trihalomethanes in excess of the MCL (maximum contaminant level) over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer." It is expected that the EPA will modify the health effects language to also include specific language on reproductive and developmental health impacts when the Stage 2 DBPR rule goes into effect by late 2004 or 2005.

Q. What is the standard for TTHMs?

A. As of January 1, 2002, the standard or Maximum Contaminant Level (MCL) for TTHM samples is 80 parts per billion (ppb) measured as a four-quarter running annual average (RAA). Water systems are required to test for TTHMs on a quarterly basis at four locations in their distribution system for each water treatment plant supplying that system. The TTHM test results for the test locations are averaged every quarter to determine the quarterly average (QA). The QA for the current quarter and the three most previous quarters are averaged to determine the RAA for the current quarter. The RAA is compared to the MCL of 80 ppb to determine compliance with the DBPR.

Q. You indicated that PWFD received notices of violation of the DBPR for three recent quarters. What was the TTHM-RAA for those three quarters?

A. I have attached Exhibit 3, which shows the official TTHM results for PWFD since 1998. For the fourth quarter of 2002, PWFD's TTHM-RAA was 89.0 ppb. For the first and second quarters of 2003, PWFD's TTHM-RAA was 89.9 ppb and 82.9 ppb, respectively. All three quarters exceeded the MCL of 80.0 ppb, the acceptable threshold level set forth in the DBPR.

Q. Please describe the other two occasions in which Portsmouth's water exceeded the acceptable levels set forth in the DBPR.

A. Prior to January 1, 2002, the TTHM standard was 100 ppb. For the third and fourth quarters of 2000, PWFD's TTHM results were 112.5 ppb and 113.0 ppb, respectively.

Q. Do the TTHM results in Exhibit 3 indicate any other problems?

A. Yes. As noted earlier, the MCL was lowered from 100 ppb to 80 ppb on January 1, 2002. Nevertheless, it is significant to note that for nine (9) of the last seventeen (17) quarters, or fifty-three percent (53%) of the time, the RAA exceeds the current TTHM MCL of 80 ppb. Furthermore, while PWFD has been in compliance with the standard for the last three quarters, the RAA has been uncomfortably close to the MCL of 80 ppb. The last three quarters have ranged from 67.7 ppb to 73.2 ppb, for an average of 70.6 ppb, which average is within twelve percent (12%) of the TTHM MCL of 80 ppb. Exhibit 3 also shows that twelve (12) of the last seventeen (17) quarters, or seventy-one (71%) of the time, the RAA exceeds or is within twelve (12%) percent of 80 ppb. In essence, most of the time, PWFD is uncomfortably close to the MCL and in fear of exceeding the EPA's thresholds.

Q. Has the water purchased by PWFD ever exceeded 80 ppb at the meter?

A. Yes. I have also attached Exhibit 4, which shows the TTHM results obtained by PWFD at the meter pit on a weekly basis for 2002 and 2003, and less frequently for 2001. This exhibit indicates that the water sold to PWFD had TTHM levels that exceeded 80 ppb for 3 of 26 tests (12%) in 2001, 25 of 52 tests (48%) in 2002, and 5 of 52 tests (10%) in 2003.

Q. Is PWFD the only water system on Aquidneck Island experiencing problems with high levels of TTHMs?

A. No. Both the Navy and NWD are experiencing high levels of TTHMs, as well.

The Navy is regularly experiencing TTHMs in excess of the current MCL of 80 ppb and was in violation of the DBPR in the 1990's when the standard was 100 ppb. I believe the Navy will be submitting pre-filed testimony on its TTHM results and problems, so I will defer to them to explain their particular situation.

The NWD is also experiencing high levels of TTHMs in its system. The attached Exhibit 5 shows TTHM results for NWD since 1999. While, NWD's official RAA for TTHMs has not exceeded the standard, it has also been uncomfortably close to the MCL in recent years. Furthermore, we have attached Exhibit 6, which indicates TTHM testing performed by PWFD in the NWD distribution system in Middletown and Portsmouth. The results show that the TTHMs in the NWD system often exceed the MCL by significant margins. This suggests that the RAA for NWD may not be representative of the TTHM levels that customers are actually experiencing.

In summary, the levels of TTHMs in the treated water are high and represent an island-wide problem that needs to be addressed without delay.

Q. Why is it a problem to have TTHM levels close to the MCL if the system is otherwise in compliance with the standard?

A. It is a problem for two reasons.

First, with an RAA close to the MCL, each water system is susceptible to exceeding the standard at any time based on high TTHM results from any one quarter. The NWD raw water quality, hence its organic content, is variable from reservoir to reservoir. The raw

water quality and organic content in each reservoir also varies from season to season. The LV-WTP is over fifty years old and susceptible to failure. Any single event or combination of events with regard to raw water quality or water treatment could result in any or all Aquidneck Island water suppliers exceeding the standard for TTHMs.

Second, the EPA standards are about to change. The Stage 2 DBPR will be promulgated in late 2004 or in 2005. The new rule will affect TTHM compliance in two ways:

- Under Stage 1, the current rule, one of the four sites for each treatment plant must represent the longest residence time for the water in the distribution system, which has not necessarily been the location of the highest level of TTHMs in the system. However, Stage 2, the new rule will require water systems to determine the locations in their distribution system with the highest level of TTHMs and to use one or more of the highest sites as sampling points for compliance.
- Under Stage 1, the TTHM results for all sampling sites are averaged to determine the RAA, which allows low TTHM sites to compensate for high TTHM sites. However, Stage 2 will require that each of the TTHM sample sites meet the MCL of 80 ppb based on a newly defined four quarter RAA for each site.

In essence, water systems will be testing the distribution system at the locations with the highest level of TTHMs and, for that worst site, the TTHM average for four quarters must meet the MCL of 80 ppb, or the system will receive a notice of violation.

Q. Would the water systems on Aquidneck Island be in compliance with the future Stage 2 DBPR based on historical TTHM levels?

A. No. PWFD, the Navy and NWD would routinely be in violation of the MCL for TTHMs since the RAA for the highest TTHM level in each system would likely exceed the 80 ppb.

Q. In your description of TTHMs, you indicated that TTHMs form during and after the treatment process. Is it fair to say that some TTHMs form in the distribution system after PWFD or the Navy buys the water?

A. Yes. The formation of TTHMs is a reaction between organic matter and chlorine that occurs over time. In is common for this reaction to continue in the distribution system and for TTHMs to increase in most typical water systems. Nevertheless, PWFD has done extensive TTHM testing at the LV-WTP and has found that the TTHMs are formed largely at the LV-WTP site prior to water being sold to PWFD or the Navy. As shown in Exhibit 7, the TTHM levels in the water leaving the LV-WTP are typically in the teens, whereas, levels are in the 50 ppb to 80 ppb range by the time the water reaches the PWFD meter pit on the LV-WTP site. Likewise, the TTHM levels in the NWD Medium Service Area at the LV-WTP are also in the 50 ppb to 80 ppb range. The variation in the TTHM formation is a function of the time of year, with the highest levels normally occurring in the summer. TTHMs tend to be higher in warmer months as the reaction occurs more readily in warmer water, the organic material is more prevalent and the chlorine levels tends to be higher for bacteriological control.

Q. Can the water purchased from NWD be re-treated to remove the TTHMs?

A. Yes, however, that is not a very practical, cost-effective method for dealing with the TTHM problem for PWFD and the Navy, nor is it in the best interests of NWD. The EPA Federal Administrative Order issued by EPA for PWFD's violation of the DBPR required, among other things, that PWFD retain a professional engineering firm in order to study various options for bringing PWFD into compliance with the DBPR. PWFD hired C&E Engineering Partners, Inc. (C&E) of Woonsocket, RI, to perform this study. C&E will be including this study as part of their testimony.

C&E evaluated current technologies including Aeration, Membrane Filtration and Granular Activated Carbon Filtration (GAC) for removal of TTHMs from the water after purchase from NWD. If removal of TTHMs is required, the recommended treatment alternative is to construct a GAC treatment system at PWFD's Union Street Pump Station. The cost for this system would include a capital expense of $2.0 million and an annual operating cost of

$265,000. Such a system would result in an estimated 36% increase in PWFD retail water rates.

C&E recommended that the most practical and cost effective method of reducing TTHM levels requires affecting changes in the treatment and operational aspects of the NWD LV-WTP. These include changes in treatment methods such as the implementation of Enhanced Coagulation to remove the precursors (organics) that allow TTHMs to form and/or the use of alternative disinfectants with compounds less likely to react with organics in NWD's source water, thereby reducing TTHM formation.

In summary, re-treatment of the water sold by NWD is not practical for several reasons:

- PWFD is not in the treatment business. Re-treating water from NWD one-quarter of a mile from the LV-WTP is not cost-effective, nor a good use of rate payers money.
- The Navy has fourteen connection points to the NWD system and would need several treatment plants and significant re-piping to re-treat the water from NWD, which is not cost-effective, nor a good use of rate payers money.
- PWFD, the Navy and NWD will not be able to meet the TTHM standards of the Stage 2 DBPR, which will be promulgated in 2004 or 2005 and will require water suppliers to be in compliance with the new standard as early as 2008.
- Based on current TTHM levels, NWD needs to solve the TTHM problem for its own distribution system anyway.
- Unlike PWFD and the Navy, the NWD is already in the treatment business. NWD is in the best position to solve the TTHM problem for itself and its wholesale customers by modifying its existing plant and treatment practices. All water users would share in the cost of the improvements.

Q. Has PWFD expressed any concerns to NWD regarding the high level of TTHMs?

A. PWFD has raised the TTHM issue with NWD on numerous occasions over the last four years, including before the Commission and with the Department of Public Utilities and Carriers. A summary of the contacts follows:

- In the spring of 2000, when high TTHM levels first became a problem, PWFD reviewed the matter with Hugo Deascentis, the Laboratory Supervisor for NWD. At that time, Mr. Deascentis suggested that PWFD's high TTHM results were probably an aberration "due to heavy spring rains." Also at that time, the Department of Health was responsible for collecting TTHM samples for PWFD. The collection dates did not coincide with the NWD and Navy TTHM sample dates, so there was nothing to compare them to for reasonableness. Moving forward, PWFD hired ESS Laboratory to analyze its TTHM samples and PWFD began to collect the samples on the same day as NWD and the Navy, for comparison purposes.
- As stated earlier, I met with Ms. Forgue on April 12, 2001. At that meeting we discussed, among other things, the TTHM problems at the LV-WTP. I expressed PWFD's concerns about the high levels of TTHMs coming from the plant and the difficulty of meeting the MCL change from 100 ppb to 80 ppb in 2002 and the future (Stage 2) standards.
- While attending the New England Water Works Association annual conference in September of 2001, I became aware of studies noting the association between TTHMs and reproductive effects, in particular spontaneous abortion in the first trimester of pregnancy. I obtained a copy of the available information on this matter. Soon after my return, I requested a meeting with Ms. Forgue to discuss the TTHM issue. On September 27, 2001, I met with Ms. Forgue, Mr. Deascentis and Gardner Reynolds, NWD Water Quality Supervisor. At the meeting, I again raised PWFD's concerns about the upcoming change in the TTHM MCL from 100 ppb to 80 ppb in 2002. I also raised the new concern about the studies, noting the association between TTHMs and spontaneous abortion and provided Ms. Forgue with a copy of the back-up information that I had obtained through the NEWWA meeting. Ms. Forgue indicated that NWD was aware of the future DBPR standards. Mr. Deascentis indicated that NWD TTHM results were fine and were actually showing a slight decrease. I suggested that a study of the LV-WTP and the TTHM issue was probably needed, but was advised by NWD that no study was planned.
- In early January 2002, PWFD noticed that the TTHM levels jumped up to 104 ppb, well above the new MCL of 80 ppb, which was odd for January when TTHM levels

tend to be at their lowest. I spoke to Mr. Reynolds about the TTHM increase and he indicated that NWD stopped using chlorine dioxide in its treatment process at the LV-WTP because of the new chlorite standard that took effect on January 1, 2002. Chlorine dioxide, when used by NWD as a disinfectant instead of chlorine, reduces the production of TTHMs, but creates chlorites, which were not regulated prior to January 1, 2002. I indicated to Mr. Reynolds, that the TTHM levels had more than doubled and were well over the new standard of 80 ppb in January, which suggested a serious problem for TTHM levels for the coming summer. I requested that the chlorine dioxide be turned back on. Mr. Reynolds essentially indicated that NWD may not be able to meet all EPA standards for all users at all times. The chlorine dioxide was turned back on in early February. In essence, NWD was experimenting with the treatment process to determine its abilities and find a way to meet EPA standards after the new standards went into effect. Water suppliers had more than two years prior notice from EPA that the new DBPR standards, including chlorite, were going into effect on January 1, 2002.

- On March 4, 2002, the Commission held a compliance hearing with NWD on Docket No. 2985. At that hearing the Commission was kind enough to allow PWFD to raise its concerns about TTHMs. The Commission directed the parties, including NWD, PWFD, DPUC and DOH to meet on the TTHM issue and begin to address the concerns of PWFD.
- A meeting was held on April 26, 2002 with the above noted parties, including the Navy, at the DPUC. PWFD and the Navy expressed their respective concerns with the TTHM levels at that meeting. PWFD requested that a compliance study be conducted on the LV-WTP given the current high levels of TTHMs, the new MCL of 80 ppb and the future Stage 2 regulations. NWD indicated that it did not have the money in its budget to perform such a study. It was agreed that within 30 days, NWD would get back to PWFD and provide a date by which NWD would provide a written response to PWFD's concerns.
- NWD's written response to PWFD's concerns arrived in early June of 2002 and is attached as Exhibit 8. The letter indicated that NWD would seek funding for a Compliance Evaluation of the LV-WTP at its next rate filing in the summer of 2002,

to determine if the plant could meet future regulations. The letter also stated that LV-WTP was currently meeting drinking water standards.

- In November of 2002, James Smith, the recently hired Newport City Manager met with PWFD to introduce himself. At that time, PWFD explained the TTHM problem in detail and indicated that PWFD's TTHM levels would likely exceed the MCL by the end of year based on existing 2002 test results and current levels of TTHM from the LV-WTP. Mr. Smith indicated that he understood the issue and would look into it.
- After exceeding the TTHM standard in late 2002, PWFD met with EPA in January 2003 to review the TTHM problem. EPA indicated that because NWD did not exceed the standard in its distribution system, it could not take direct action against NWD. Nevertheless, following this meeting, EPA met with NWD to review the TTHM issue with them. Shortly thereafter, Mr. Smith contacted me to find out what PWFD's meeting with EPA entailed. Referring to the discussion of TTHMs at our November meeting, I advised Mr. Smith that the TTHM problem at LV-WTP had resulted in PWFD exceeding the MCL for the fourth quarter of 2002. I advised Mr. Smith that PWFD met with EPA to solicit its help in resolving the problem with NWD water quality. Mr. Smith indicated that he had approval from the DPUC to use other approved capital money for a TTHM study and an RFP would be released soon.
- NWD hired an engineering firm to perform the Compliance Evaluation on May 14, 2003. At PWFD's request, PWFD and the Navy attended a meeting on September 9, 2003, with NWD and its engineer to provide data and explain the wholesale purchaser's perspective on the TTHM problems. NWD had no study findings to report to PWFD or the Navy at that time. Ms. Forgue stated NWD's position that NWD "may not be able" to treat the water to solve the TTHM problems for the wholesaler customers.
- By letter of November 6, 2003 to Mr. Smith with a copy to Ms. Forgue, PWFD requested a draft or final copy of the NWD Compliance Evaluation. Mr. Smith telephoned PWFD to indicate that he did not yet have any reports from their engineer. On February 17, 2004, PWFD also requested any draft or final reports on

the Compliance Evaluation from NWD in data request PWFD 2-10. PWFD received NWD's response to data request 2-10 on March 11, 2004 – one day before filing this testimony.

Q. What has been the response of NWD regarding the TTHM issues?

A. Despite the TTHM concerns raised by PWFD, and its violations of the DBPR, the attitude of NWD has generally been one of denial and lack of concern. This is evidenced in part by statements in Ms. Forgue's letter of June 3, 2002, which does not acknowledge or address the current TTHM problems raised by PWFD in its appearance before the Commission on March 4, 2002 and with the DPUC on April 26, 2002. The letter states:

- "Specifically, the study will include a determination of whether the plant's existing processes can meet future (emphasis added) regulations".
- "The plant is currently meeting drinking water standards".

In addition, Ms. Forgue's June 3, 2002 letter, states, "As you have been informed, Newport Water intends to proceed with a rate filing this summer (emphasis added). Included within the filing will be funding request for a Compliance Evaluation of the Lawton Valley Treatment Plant". Despite this declaration, NWD Docket No. 3457, which was filed on August 1, 2002, just two short months after the letter, makes no mention of the TTHM problem, let alone requesting any money for a study. Likewise, we find no discussion of the TTHM problem in this docket, or the potential future capital funds that will be required to address it.

In mid August of 2002, NWD had its third quarter TTHM results in hand and knew its RAA for its own distribution system. The NWD RAA average for the first three quarters of 2002 was 82.5 ppb, and the PWFD weekly meter pit test results, which PWFD shared with NWD, ranged from 101 ppb to 195 ppb. Apparently, NWD recognized at this time that it was on a path to exceed the MCL of 80 ppb for its 2002 four quarter RAA, unless something changed. On August 20, 2002, the meter pit TTHMs level dropped to 87.2 ppb from 136 ppb the week before. Upon inquiry, PWFD learned that NWD had adjusted their chlorination practices at

the LV-WTP to address the high TTHM problem. While this adjustment allowed NWD to satisfy the compliance thresholds, the adjustment was too little, too late for PWFD. Due to the high TTHM levels in July of 2002, PWFD's RAA was over 80 ppb for the fourth quarter of 2002 and for the first and second quarters of 2002, resulting in the three violation notices.

Q. Where does that leave PWFD with regard to its EPA Administrative Order?

A. With the August 2002 changes to the chlorination practices at the LV-WTP, PWFD's RAA has managed to stay under the MCL of 80 ppb since the second quarter of 2003, albeit by an uncomfortable margin. Considering the current compliance with the TTHM standard, PWFD has requested that EPA take no further action on the compliance order, until all parties have a chance to review the NWD Compliance Evaluation.

Q. What is PWFD looking for from NWD and the Commission?

A. The high TTHM levels are a current and ongoing problem for all water users on Aquidneck Island. The current regulations for TTHM compliance are a problem now, and they will be an even bigger problem under the Stage 2 DBPR.

Of major concern, EPA has now determined that high TTHMs may be a short-term health issue with regard to spontaneous abortion, stillbirth, neural tube defects, pre-term delivery, intrauterine growth retardation, and low birth weight. Furthermore, with the new Stage 2 DPBR, EPA will no longer be satisfied with averaging TTHM results from all sample locations. Instead, because of the health effects and the problems with averaging the results, EPA will require water suppliers to locate the point in the distribution system with the highest level of TTHMs. In essence, the RAA for this highest TTHM site will determine the water system's compliance with the MCL. We have attached as Exhibit 9 the public notices that were required by EPA to be place in local newspapers and mailed to every PWFD water customer after each of the three most recent violations. Also included in Exhibit 9 are copies of articles that appeared in the local newspaper regarding the TTHM issues at PWFD. The compounding effect of these notices and articles is to shake the public's confidence in the

island's water supply. Imagine the public's reaction and loss of confidence in the water supply when language regarding reproductive and developmental effects are required under Stage 2 DBPR. For reference on this subject, we have included Exhibit 10, which contains newspaper articles about a TTHM problem that went unaddressed by the water supplier for Chesapeake, Virginia. The articles describe the public's loss of confidence in the water supply and the resultant public out-cry and lawsuits that followed.

C&E has testified that this problem can be solved at the LV-WTP for the benefit of all Aquidneck Island water users with currently available technology. The cost to improve the system would be borne by everyone. It makes no sense for PWFD and the Navy to construct several secondary treatment plants to re-treat NWD water at the purchase point.

PWFD wants the TTHM problem fixed by NWD immediately so that PWFD, the Navy and NWD can distribute water throughout their respective distribution systems without the constant concern of a violation of the current standards or, more importantly, the potential effects on their customers. PWFD also wants the problem addressed well in advance of the Stage 2 DBPR becoming effective. NWD's historical approach of "wait and see" and experimenting with treatment after the standards have changed is unacceptable for a public water supplier. The TTHM problem should be addressed proactively and without further delay.

All of those involved in Docket No. 2985 have seen first hand the slow pace at which NWD moves. In that docket, NWD testified that it needed increased rates for proposed capital work, and that the work would be completed within one to two years. Four years later much of that construction has not even been started. Fortunately, the Commission had the foresight to require restricted accounts for the money for capital projects. Two years after the Commission requested "all parties within 15 days to confer with each other and arrive at a time whereupon they would meet and begin to address the concerns of Portsmouth", there is still no final report on the TTHM problem for review and discussion in this docket.

PWFD and the Navy cannot afford to wait any longer for the implementation of a solution for the TTHM problem, nor can NWD. In that regard, PWFD encourages the Commission to mandate and oversee the implementation of a viable, island wide solution for the TTHM problem and to set a strict timetable for action as part of this docket. The exact course of action and the cost will have to be determined after the parties receive and have time to evaluate the NWD Compliance Evaluation.

Q. Does this conclude your testimony?

A. PWFD is still awaiting NWD's responses to several data requests and has not reviewed the Compliance Evaluation, which was just received. PWFD may need to file rebuttal testimony to address issues raised by these outstanding items. In the absence of other issues or questions that may be raised by the NWD or the Division, this does conclude my testimony.

EXHIBIT 1

RESUME OF WILLIAM J. MCGLINN

EXHIBIT 1

RESUME OF
WILLIAM J. MCGLINN, P.E.

POSITION	General Manager and Chief Engineer Portsmouth Water and Fire District 1944 East Main Road Portsmouth, RI 02871
EDUCATION	B.S. Civil and Environmental Engineering University of Rhode Island, 1976
REGISTRATION	Professional Engineer Rhode Island
CERTIFICATIONS	Class 4 Drinking Water Distribution Operator Class 2 Drinking Water Treatment Operator NEWWA Certificate of Competency in Operation of Water Fluoridation Systems
AWARDS	Operator's Meritorious Service Award from New England Water Works Association in 1999
PROFESSIONAL SOCIETIES	Rhode Island Water Works Association Executive Committee 1990 to 1998 President 1993 to 1995 Chairman - Water for People Committee 1999-2004 Member – Legislative Committee 2004 New England Water Works Association American Water Works Association American Society of Civil Engineers National Society of Professional Engineers American society of Civil Engineers
HONOR SOCIETIES	Tau Beta Pi - National Engineering Honor Society Phi Kappa Phi - National Honor Society
EXPERT TESTIMONY	Expert testimony on water supply engineering, sanitary engineering and general civil engineering before the Rhode Island Superior Court, the Rhode Island Public Utilities Commission, the Portsmouth Zoning Board of Review, the Tiverton Zoning Board of Review

EXHIBIT 1 (continued)

RESUME OF
WILLIAM J. MCGLINN, P.E.

PROFESSIONAL EXPERIENCE

Portsmouth Water and Fire District, Portsmouth, RI

Mr. McGlinn has been employed by the Portsmouth Water and Fire District as its General Manager and Chief Engineer since October 10, 1988. His responsibilities include managing the District's staff and day to day operations, performing engineering analysis and design, coordinating the activities of the District's professional consultants, advising the Administrative Board, and implementing the policy decisions of the Administrative Board. Mr. McGlinn served as an engineering consultant to the Portsmouth Water and Fire District from May of 1982 to October of 1988. During that time he advised the Administrative Board and the Maintenance Manager on the hydraulic operation and expansion of the water system.

Maguire Group, Inc., Providence, RI

Prior to being hired by the Portsmouth Water in 1988, Mr. McGlinn was employed for eleven years by Maguire Group, Inc., an engineering consulting firm located in Providence, Rhode Island. He was responsible for project engineering and managing projects in the Environmental Engineering Division and, upon his departure held the title of Senior Principal Engineer. His assignments during this tenure included the design and construction management of water systems. In addition, Mr. McGlinn was responsible for water system hydraulic modeling and analysis, as well as water system troubleshooting and testing. While at Maguire he was also involved in sanitary engineering and resource recovery engineering. The clients that Mr. McGlinn served are numerous and include the Providence Water Supply Board, the Kent County Water Authority, the Bristol County Water authority, the Lincoln Water Commission, the State of Rhode Island, the Portsmouth Water and Fire District, and the Town of Cumberland in Rhode Island; and the Prince George's County Government, Maryland, the City of Detroit, Michigan, the Norwich Department of Public Utilities, Connecticut, the City of Gloucester, Massachusetts, and the United States Army Corps of Engineers, Frankfurt, West Germany.

Westcott Construction Company, North Attleboro, Ma

Mr. McGlinn was employed by the Westcott Construction Company for one year prior to working for Maguire Group. Mr. McGlinn performed site layout, surveying and estimating for the construction of the Taunton Wastewater Treatment Plant project. His duties included the layout and monitoring of water and sewer main construction, concrete structure construction, and equipment installation.

EHHIBIT 2

PWFD FEDERAL ADMINISTRATIVE ORDER

EPA - TTHMs

UNITED STATED ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND OFFICE
One Congress Street, Suite 1100
Boston Massachusetts 02114-2023

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

March 10, 2003

Mr. William McGlinn
General Manager and Chief Engineer
Portsmouth Water and Fire District
1944 East Main Road
P.O. Box 99
Portsmouth RI 02871-0099

Re: SDWA Administrative Order Issued to Portsmouth Water and Fire District
PWS ID# RI 1592022

Dear Mr. McGlinn:

The Environmental Protection Agency ("EPA"), in consultation with the Rhode Island Department of Public Health (RIDOH), is issuing the attached Administrative Order (the "Order"), as provided under Section 1414(g) of the Safe Drinking Water Act (the "Act"), 42 U.S.C. Section 300g-3, to the Portsmouth Water and Fire District ("Portsmouth") for violations of the Act and the National Primary Drinking Water Regulations. Specifically, the Order states that Portsmouth failed to meet Maximum Contaminant Levels ("MCLs") for Total Trihalomethanes (TTHMs) for the final quarter of 2002 and the first quarter of 2003, which are violations of the Disinfection Byproducts Rule (DBPR). As you are aware, the DBPR was promulgated by EPA to address the important public health benefits found in the regulation of DBPs in drinking water.

Among other things, the Order requires Portsmouth to study various options for bringing the system into compliance with the DBPR requirements of the Safe Drinking Water Act. According to the Order, Portsmouth must conduct a compliance study which shall explore Best Available Technologies ("BAT") to bring Portsmouth into compliance with the MCL for TTHMs. Once Portsmouth completes its study, EPA and the RIDOH will meet with you and other appropriate engineering professionals to discuss the findings of the study and to find a long-term solution that will be incorporated into this Order.

EPA and RIDOH acknowledge that Portsmouth purchases all of its drinking water from the City of Newport, and that such arrangement may make it more difficult to address drinking water quality issues such as disinfection byproducts. EPA and RIDOH intend to work with both water

cc: AB

systems to ensure that consumers of each water system receive drinking water that meets regulatory requirements. We appreciate your cooperation in these matters as we work together to achieve this goal.

If you have any technical questions concerning the terms of this Order, please contact Diane Boisclair, RI DOH coordinator at (617) 918-1862, Gina Snyder, Enforcement Coordinator, at (617) 918-1837 or have your attorney contact Sheryl Rosner, Senior Enforcement Counsel at (617) 918-1865.

Sincerely,

Ken Moraff
Enforcement Manager
Office of Environmental Stewardship
U. S. Environmental Protection Agency, Region 1

Enclosure

cc: Beth Deabay, Gina Snyder, and Diane Boisclair, EPA-SEW
Ellie Kwong, EPA-CRI
Sheryl Rosner, EPA-SEL
June Swallow and Susan Robideau, RI DOH

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

IN THE MATTER OF:

The City of Portsmouth, Rhode Island
Portsmouth Water and Fire District

PWS ID. No. 1592022

SDWA-01-15-2003
ADMINISTRATIVE ORDER

STATUTORY AUTHORITY

The following findings are made and Order issued under the authority vested in the Administrator of the United States Environmental Protection Agency (EPA) by Section 1414(g) of the Safe Drinking Water Act ("SDWA"), 42 U.S.C. Section 300g-3(g) and duly delegated to the Enforcement Manager of the Office of Environmental Stewardship of Region 1.

1. The City of Portsmouth, Rhode Island, Portsmouth Water and Fire District (hereinafter "Portsmouth") owns and operates a "public water system" and is a "water supplier" within the meaning of Section 1401(4) and (5) of the SDWA, 42 U.S.C. §300f(4) and (5). The public water system is located in Portsmouth, Rhode Island and serves approximately 16,300 people.

2. Portsmouth is a "person" within the meaning of Section 1401(12) of the SDWA, 42 U.S.C. §300f(12), and is subject to an Administrative Order issued under Section 1414(g)(1) of the SDWA, 42 U.S.C. §300(g)-3(1).

3. Portsmouth provides piped water for human consumption and regularly serves at least 15 service connections and a population of at least 25 year-round residents, and is therefore a "community water system" as defined by Section 1401(15) of the SDWA, 42 U.S.C. §300f(15) and 40 C.F.R. §141.2.

4. As a "public water system" and a "water supplier", Portsmouth is subject to the regulations promulgated by EPA pursuant to Section 1412 of the Act, 42 U.S.C. Section 300g-1, entitled "National Primary Drinking Water Regulations" including the "Disinfectants and Disinfection Byproducts Rule" ("DBPR"). The DBPR regulations, promulgated by EPA on December 16, 1998 and found at 40 C.F.R. Section 141, Subpart L, are "applicable requirements" as defined by Section 1414(i) of the Act, 42 U.S.C. Section 300g-3(i) and as such, are enforceable under Section 1414(a)(2)(A) of the Act, 42 U.S.C. Section 300g-3(a)(2)(A).

5. The DBPR was promulgated by EPA to protect public health by regulating potentially harmful disinfectant byproducts, which are formed when chlorine reacts with natural organic and inorganic matter in drinking water. In accordance with the DBPR, Portsmouth was required to comply with the Rule by January 1, 2002.

6. The Rhode Island Department of Health (RI DOH) administers the Public Water Supply Supervision Program in Rhode Island pursuant to Section 1413 of the SDWA. However, the RI DOH has not obtained primary enforcement responsibility for the DBPR to date, and therefore, EPA has primary responsibility for enforcing the DBPR.

7. The Portsmouth Public Water System purchases its water from the City of Newport Water

System (PWS ID# RI 1592010).The Newport Water System obtains its water from several surface water sources and treats the water at two plants, the Lawton Valley Water Treatment Plant and the Station 1 Water Treatment Plant. Portsmouth receives water that is filtered through the Lawton Valley Water Treatment Plant. Both treatment plants provide conventional filtration treatment. Newport Water System disinfects its drinking water using chlorine and chlorine dioxide. Portsmouth provides additional chlorine treatment, as necessary, for bacteriological control.

8. Pursuant to 40 C.F.R. §141.132 Portsmouth is required to monitor for Total Trihalomethanes ("TTHMs") and Haloacetic Acids ("HAA5s") on a quarterly basis, with a minimum of four water samples per quarter per treatment plant, in accordance with its monitoring plan. Pursuant to 40 C.F.R. §141.133(b), if the running annual arithmetic average of quarterly averages covering any consecutive four-quarter period exceeds the MCL, the system is in violation of the MCL and must notify the public pursuant to 40 C.F.R. §141.32 or 141.202 in addition to reporting to the state pursuant to 40 C.F.R. §141.134.

9. Pursuant to 40 C.F.R. §141.64, the maximum contaminant level ("MCL") for TTHMs is 0.080 mg/l.

10. From January 1, 2002 to December 31, 2002, Portsmouth monitored for TTHMs and calculated the running annual arithmetic average to be 0.089 mg/L. From April 1, 2002 until March 31 2003, Portsmouth calculated the running annual arithmetic average for TTHMs to be 0.090 mg/L. Portsmouth, therefore, is in violation of the 0.080 mg/L MCL for TTHMs for the fourth quarter of 2002 and for the first quarter of 2003, respectively.

11. EPA is issuing this Administrative Order to place the Portsmouth Water System on an enforceable schedule to comply with the DBPR requirements of the SDWA and 40 C.F.R. Part 141, Subpart L.

12. Pursuant to 1414(a)(2)(B) 42 U.S.C. §300g-3(a)(2)(B), the Administrator of the Town of Portsmouth has been notified of this action.

ORDER

Based on the foregoing FINDINGS, and pursuant to the authority of Section 1414(g), 42 USC §300g-3(g), of the SDWA, EPA hereby ORDERS:

13. **Within thirty (30) days of receipt of this Order**, Portsmouth shall retain a professional engineering firm in order to study various options for bringing Portsmouth into compliance with the DBPR (hereinafter "compliance study"). The compliance study shall explore Best Available Technologies ("BAT") in order to bring Portsmouth into compliance with the MCL for TTHM. The compliance study shall explore, at a minimum, the following BATs and issues:

    1. Treatment options including Granular Activated Carbon (GAC); reverse osmosis; aeration; and other technologies, as appropriate;

    2. Changes to the hydraulic flow within the water system, including flushing the current distribution system and changes to the distribution system; and,

    3. Water storage tank issues, including storage tanks in the supplier's system, that might be contributing to the high TTHM levels detected in the Portsmouth portion of the distribution system.

The compliance study must include a discussion estimating the time it may take for planning and

construction for each treatment option, and must also include estimates of costs of each option, if available. If such treatment options require rate increases, all cost and time estimates for planning, design, construction, and operating costs should include such considerations, as appropriate. Evaluation of each treatment option must include analysis of the relative costs and benefits of the options.

The study must be completed within six months of receipt of this Order and submitted to EPA and RIDOH. The compliance study shall include recommendations for changes to the operation of the water system(s) to address BAT for treatment of the TTHMs.

14. Within thirty (30) days of completion of the Compliance Study, Portsmouth shall meet with EPA and RI DOH to discuss the findings of the Compliance Study. The purpose of such meeting shall be to set forth a long term implementation plan that will ultimately bring Portsmouth into compliance with the MCL for TTHMs. At the conclusion of the meeting(s), but in no event later than 60 days after the first meeting, Portsmouth shall submit a final long-term implementation plan, with milestone dates and final compliance dates set forth therein. Upon approval by EPA of the milestone and final compliance dates, the long-term implementation plan shall be incorporated by reference into this Administrative Order and shall be enforceable hereunder.

15. Immediately upon receipt of this Order, Portsmouth shall comply with the requirements of 40 C.F.R. Part 141, Subpart Q, to notify the public of the failure to comply with any primary drinking water regulation set forth in 40 C.F.R. Part 141, including the failure to comply with the MCL for TTHMs. As of the effective date of this Order, Portsmouth shall comply with the public notification requirements of 40 C.F.R. §§141.201-205 and certify compliance with this paragraph to EPA.

16. Within thirty (30) days of receipt of this order Portsmouth shall submit to EPA and RIDOH for approval a detailed sampling plan in accordance with 40 C.F.R. §141.132(f) including a rationale for the specific schedules and locations (including maps) for collecting samples.

17. All information required to be submitted by this Order to EPA shall be mailed to:

Ms. Diane Boisclair
Water Compliance Unit
Drinking Water Enforcement (SEW)
U.S. Environmental Protection Agency
1 Congress Street, Suite 1100
Boston, MA 02114-2023
(617) 918-1862

and

Ms. Sheryl K. Rosner, Senior Enforcement Counsel
U.S. Environmental Protection Agency (SEL)
1 Congress Street, Suite 1100
Boston, MA 02114-2023
(617) 918-1865

18. A copy of a information required to be submitted by this Order shall be mailed to:

Ms. Susan Robideau
State of Rhode Island, Department of Health
Office of Drinking Water Quality
3 Capitol Hill - Room 209

Providence, RI 02908-5097
(401) 222-6867

GENERAL PROVISIONS

19. Notwithstanding Portsmouth's compliance with any requirement of this Order, Portsmouth's failure to comply with all of the requirements of the SDWA and Part 141 may subject Portsmouth to additional enforcement action, including but not limited to, judicial and administrative actions.

20. This Administrative Order shall not prohibit, prevent, or otherwise preclude EPA from taking whatever action it deems appropriate to enforce the SDWA in any manner and shall not prohibit, prevent, or otherwise preclude EPA from using this Order in subsequent administrative or judicial proceedings. Nothing in this Order shall constitute a waiver, suspension or modification of the requirements of the SDWA, or the rules and regulations promulgated thereunder which remain in full force and effect. Issuance of this Order is not an election by EPA to forgo any civil or criminal action otherwise authorized under the Law.

21. Violation of any term of this Order may subject Portsmouth to a penalty of up to $31,500 per day of violation under Section 1414(g) of the Act, 42 U.S.C. 300g-3(g).

22. This Order does not relieve Portsmouth of any responsibilities or liabilities established pursuant to any applicable federal, state, or local law.

23. This Administrative Order shall take effect upon signature.

ORDERED, this 10th day of March, 2003.

Ken Moraff for
Ken Moraff
Enforcement Manager
Office of Environmental Stewardship
U.S. Environmental Protection Agency, Region 1

EXHIBIT 3

PWFD OFFICIAL TTHM RESULTS

EXHIBIT 3

PORTSMOUTH WATER AND FIRE DISTRICT

PWFD OFFICIAL TTHM RESULTS SUBMITTED TO DOH

YEAR	QTR	DATE	ROGER WILLIAMS COLLEGE	VFW HALL	PORTS. FIRE DEPT	RI STATE POLICE	METER PIT AT LV-WTP	98 BRAMANS LANE RESIDENCE	QUARTERLY AVERAGE	FOUR QUARTER RUNNING ANNUAL AVERAGE (RAA)	RAA EXCEEDS 80 PPB	RAA WITHIN 12% OF 80 PPB
2004	1	01/06/04		52.6	38.8	38.1		39.2	42.2	67.7		
2003	4	10/14/03		81.2	76.3		63.9	81.7	75.8	73.2		YES
2003	3	07/01/03	91.6		91.7		81.8	88.1	88.3	70.8		YES
2003	2	04/08/03	70.3		71.6		54.2	61.0	64.3	82.9	YES	YES
2003	1	02/06/03	71.3		62.1		60.2	64.3	64.5	89.9	YES	YES
2002	4	11/13/02	74.0		64.2		50.8	74.4	65.9	89.0	YES	YES
2002	3	07/23/02	129		139	-	138	141	137	90.7	YES	YES
2002	2	05/07/02	86.2		76.4	-	98.6	108	92.3	57.5		
2002	1	03/26/02	61.8		67.5	-	50.0	64.1	60.9	49.3		
2001	4	11/15/01	86.7		74.8	-	49.8	78.3	72.4	44.7		
2001	3	09/25/01	10.7		2.03	-	2.43	2.82	4.50	45.2		
2001	2	04/26/01	65.8		62.1	-	51.7	58.5	59.5	69.0		YES
2001	1	01/09/01	53.7		39.8	-	35.5	39.7	42.2	86.7	YES	YES
2000	4	11/27/00	113.0		104.0	-	108.0	121.0	74.4	113.0	YES	YES
	4	11/17/00	43.2		35.8	-	-	38.9	-	-		
	4	11/08/00	-		-	-	31.3	-	-	-		
2000	3	07/11/00	106.0		92.6	98.2		103.0	100.0	112.5	YES	YES
2000	2	06/21/00	77.1		76.2	67.0		65.8	130.3	98.9	YES	YES
	2	04/21/00	183.0		192.0	179.0		202.0	-	-		
2000	1	03/23/00	160.0		160.0	130.0		140.0	147.5	84.9	YES	YES
1999	4	10/12/99	87.0		94.0	52.0		56.0	72.3	61.8		
1999	3	09/13/99	74.0		36.0	39.0		34.0	45.8	58.7		
1999	2	05/14/99	72.0		74.0	74.0		76.0	74.0	61.4		
1999	1	01/14/99	25.0		62.0	69.0		65.0	55.3	55.8		
1998	4	10/23/98	59.0		80.0	42.0		58.0	59.8	59.4		
1998	3	07/08/98	33.0		63.0	61.0		69.0	56.5	62.8		
1998	2	06/03/98	26.0		69.0	55.0		56.0	51.5	67.6		
1998	1	01/20/98	21.0		88.0	85.0		85.0	69.8	73.4		
1997	4	10/03/97	40.0		78.0	88.0		88.0	73.5	74.7		
1997	3	07/11/97	54.0		97.0	75.0		76.0	75.5	75.3		
1997	2	04/15/97	22.0		72.0	102.0		104.0	75.0	75.0		

EXHIBIT 4

TTHM LEVELS AT METER PIT
(PURCHASE POINT)

EXHIBIT 4

PORTSMOUTH WATER AND FIRE DISTRICT

TTHM LEVELS AT METER PIT (PURCHASE POINT)

YEAR	QTR	DATE	PWFD METER PIT AT LV-WTP	TTHMs EXCEEDS 80 PPB AT METER PIT
2004	1	03/02/04	49.4	
2004	1	02/24/04	50.6	
2004	1	02/17/04	48.3	
2004	1	02/10/04	44.6	
2004	1	02/03/04	37.4	
2004	1	01/27/04	33.4	
2004	1	01/20/04	29.9	
2004	1	01/13/04	36.2	
2004	1	01/08/04	60.8	
2004	1	01/06/04	35.3	
2003	4	12/29/03	33.0	
2003	4	12/22/03	31.9	
2003	4	12/16/03	32.7	
2003	4	12/09/03	39.6	
2003	4	12/02/03	45.3	
2003	4	11/24/03	51.8	
2003	4	11/18/03	51.1	
2003	4	11/10/03	48.3	
2003	4	11/04/03	66.9	
2003	4	10/28/03	54.8	
2003	4	10/21/03	54.2	
2003	4	10/14/03	64.0	
2003	4	10/07/03	53.8	
2003	4	10/01/03	64.6	
2003	3	09/23/03	61.3	
2003	3	09/16/03	65.9	
2003	3	09/09/03	72.0	
2003	3	09/02/03	83.8	YES
2003	3	08/26/03	107	YES
2003	3	08/19/03	99.8	YES
2003	3	08/12/03	66.0	
2003	3	08/05/03	68.8	
2003	3	07/29/03	69.5	
2003	3	07/22/03	69.1	
2003	3	07/15/03	86.7	YES
2003	3	07/08/03	78.6	
2003	3	07/01/03	81.8	YES

EXHIBIT 4

PORTSMOUTH WATER AND FIRE DISTRICT

TTHM LEVELS AT METER PIT (PURCHASE POINT)

YEAR	QTR	DATE	PWFD METER PIT AT LV-WTP	TTHMs EXCEEDS 80 PPB AT METER PIT
2003	2	06/24/03	70.4	
2003	2	06/17/03	63.5	
2003	2	06/10/03	66.2	
2003	2	06/03/03	73.4	
2003	2	05/27/03	68.9	
2003	2	05/20/03	63.7	
2003	2	05/13/03	58.1	
2003	2	05/06/03	54.9	
2003	2	04/29/03	48.2	
2003	2	04/22/03	60.7	
2003	2	04/15/03	42.4	
2003	2	04/08/03	54.2	
2003	2	04/01/03	51.8	
2003	1	03/25/03	50.1	
2003	1	03/18/03	34.1	
2003	1	03/11/03	34.6	
2003	1	03/04/03	29.1	
2003	1	02/25/03	43.1	
2003	1	02/19/03	63.0	
2003	1	02/11/03	56.0	
2003	1	02/06/03	60.2	
2003	1	01/28/03	58.1	
2003	1	01/21/03	58.2	
2003	1	01/14/03	55.7	
2003	1	01/07/03	56.6	
2002	4	12/30/02	59.1	
2002	4	12/23/02	54.2	
2002	4	12/17/02	38.2	
2002	4	12/10/02	34.3	
2002	4	12/03/02	47.5	
2002	4	11/26/02	57.4	
2002	4	11/19/02	46.6	
2002	4	11/13/02	50.8	
2002	4	11/07/02	59.8	
2002	4	10/29/02	57.1	
2002	4	10/22/02	48.2	
2002	4	10/15/02	45.9	
2002	4	10/08/02	52.1	

EXHIBIT 4

PORTSMOUTH WATER AND FIRE DISTRICT

TTHM LEVELS AT METER PIT (PURCHASE POINT)

YEAR	QTR	DATE	PWFD METER PIT AT LV-WTP	TTHMs EXCEEDS 80 PPB AT METER PIT
2002	4	10/01/02	50.9	
2002	3	09/24/02	83.6	YES
2002	3	09/17/02	86.3	YES
2002	3	09/10/02	83.2	YES
2002	3	09/03/02	90.1	YES
2002	3	08/27/02	80.8	YES
2002	3	08/20/02	87.2	YES
2002	3	08/13/02	136	YES
2002	3	08/06/02	117	YES
2002	3	07/30/02	148	YES
2002	3	07/23/02	138	YES
2002	3	07/16/02	101	YES
2002	3	07/09/02	195	YES
2002	3	07/02/02	178	YES
2002	2	06/25/02	116	YES
2002	2	06/19/02	132	YES
2002	2	06/11/02	137	YES
2002	2	06/04/02	110	YES
2002	2	05/28/02	108	YES
2002	2	05/21/02	110	YES
2002	2	05/14/02	116	YES
2002	2	05/07/02	98.6	YES
2002	2	04/30/02	74.6	
2002	2	04/23/02	103	YES
2002	2	04/16/02	75.5	
2002	2	04/09/02	83.7	YES
2002	2	04/02/02	65.7	
2002	1	03/26/02	50.0	
2002	1	03/19/02	52.7	
2002	1	03/12/02	63.4	
2002	1	03/05/02	48.3	
2002	1	02/20/02	51.6	
2002	1	02/12/02	44.1	
2002	1	02/05/02	60.5	
2002	1	01/29/02	75.6	
2002	1	01/22/02	104	YES
2002	1	01/15/02	93.4	YES
2002	1	01/08/02	74.3	

EXHIBIT 4

PORTSMOUTH WATER AND FIRE DISTRICT

TTHM LEVELS AT METER PIT (PURCHASE POINT)

YEAR	QTR	DATE	PWFD METER PIT AT LV-WTP	TTHMs EXCEEDS 80 PPB AT METER PIT
2002	1	01/02/02	75.0	
2001	4	12/27/01	40.0	
2001	4	12/18/01	48.0	
2001	4	12/11/01	77.2	
2001	4	12/04/01	72.0	
2001	4	11/27/01	56.2	
2001	4	11/20/01	51.2	
2001	4	11/15/01	49.8	
2001	4	11/06/01	39.1	
2001	4	10/30/01	66.1	
2001	4	10/23/01	46.0	
2001	4	10/16/01	48.1	
2001	4	10/09/01	2.32	
2001	4	10/02/01	14.5	
2001	3	09/25/01	2.43	
2001	3	09/11/01	31.8	
2001	3	08/21/01	94.4	YES
2001	2	06/12/01	50.5	
2001	2	04/26/01	51.7	
2001	2	04/17/01	47.4	
2001	1	03/20/01	46.5	
2001	1	02/27/01	44.9	
2001	1	02/20/01	175	YES
2001	1	02/06/01	103.0	YES
2001	1	01/30/01	65.8	
2001	1	01/26/01	22.4	
2001	1	01/09/01	35.5	
2000	4	12/27/00	19.1	
2000	4	12/19/00	33.8	
2000	4	12/12/00	67.4	
2000	4	12/06/00	118.0	YES
2000	4	11/27/00	108.0	YES
2000	4	11/08/00	31.3	
2000	4	10/10/00	37.8	
2000	3	09/26/00	53.1	
2000	3	09/12/00	82.5	YES
2000	3	08/29/00	73.0	
2000	3	08/10/00	103.0	YES

EXHIBIT 5

NWD TTHMs

EXHIBIT 5

PORTSMOUTH WATER AND FIRE DISTRICT

NWD TTHMs

YEAR	QUARTER	NWD SAMPLE DATES	HALSEY STREET	VICTORIAN ROSE	NEWPORT CITY HALL	CASTLE HILL COAST GUARD	PORTS-MOUTH MIDDLE SCHOOL	MIDDLE-TOWN TOWN HALL	JFK ELEMEN-TARY SCHOOL	HOWARD JOHNSON	QUARTERLY AVEARAGE	RUNNING ANNUAL AVERAGE (RAA)	EXCEEDS 80 PPB
2004	1	01/08/04	79.0	67.1	48.0	86.0	54.0	52.5	94.0	32.3	64.1	71.3	
2003	4	10/07/03	83.5	83.8	54.7	104.0	57.4	58.0	59.5	39.6	67.6	65.3	
2003	3	07/01/03	70.0	87.3	66.1	113.3	111.9	72.7	99.6	82.8	88.0	62.1	
2003	2	04/08/03	61.8	59.0	52.8	73.0	55.6	64.3	91.3	66.4	65.5	67.2	
2003	1	02/06/03	45.8	35.8	30.5	49.5	28.6	42.0	43.9	45.0	40.1	71.4	
2002	4	11/13/02	62.6	47.2	51.1	73.6	46.6	53.1	47.9	55.0	54.6	75.6	
2002	3	07/23/02	103.4	53.4	64.4	88.6	148.6	120.0	117.0	145.0	108.4	81.1	YES
2002	2	05/06/02	82.9	75.4	83.0	96.4	74.6	66.5	87.6	94.1	82.6	72.5	
2002	1	02/20/02	67.0	62.1	59.3	99.3	45.7	40.3	38.4	40.7	56.6	66.1	
2001	4	11/15/01	93.0	66.0	70.0	100.0	71.2	71.9	86.0	55.5	76.7	61.6	
2001	3	07/25/01	77.0	60.0	79.0	125.0	42.0	66.2	74.3	69.0	74.1	60.0	
2001	2	04/26/01	73.1	53.0	65.8	72.0	47.8	44.3	47.4	54.3	57.2	65.6	
2001	1	01/09/01	52.1	48.2	45.5	72.7	20.7	23.3	23.1	21.2	38.4	78.6	
2000	4	11/08/00	89.0	76.0	71.0	95.0	57.0	58.0	61.0	55.0	70.3	81.0	YES
2000	3	07/11/00	116.0	57.7	76.9	89.8	134.0	111.5	119.1	69.3	96.8	84.9	YES
2000	2	04/13/00	103.0	108.2	111.2	129.5	149.9	106.0	91.0	72.3	108.9	68.1	
2000	1	01/26/00	61.4	38.2	30.4	64.5	2.1	63.1	51.7	74.4	48.2	54.8	
1999	4	12/15/99	89.9	82.7	87.9	109.6	79.3	69.6	111.2	54.0	85.5	57.0	
1999	3	07/08/99	46.1	11.4	25.6	33.0	27.4	29.6	32.2	31.7	29.6	42.7	
1999	2	05/06/99	90.0	66.0	70.0	121.0	59.4	43.6	45.7	43.0	55.7	70.2	

EXHIBIT 6

NWD DISTRIBUTION SYSTEM TTHMs AS TESTED BY PWFD

EXHIBIT 6

PORTSMOUTH WATER AND FIRE DISTRICT

NWD DISTRIBUTION SYSTEM TTHMs AS TESTED BY PWFD

YEAR	QUARTER	DATE	S&S FABRICS 1 MARITIME DR. PORTSMOUTH (MELVILLE)	EXCEEDS 80 PPB	LAW OFFICES DAVID F. FOX 850 AQUIDNECK AVE. MIDDLETOWN (HIGH SERVICE AREA)	EXCEEDS 80 PPB
2004	1	02/03/04			53.3	
2004	1	01/06/04			57.7	
2003	4	12/02/03			67.1	
2003	4	11/04/03			71.3	
2003	4	10/14/03			86.6	YES
2003	3	09/02/03			134.0	YES
2003	3	08/05/03			112.0	YES
2003	3	07/01/03			96.9	YES
2003	2	06/03/03			74.2	
2003	2	05/06/03			71.2	
2003	2	04/08/03	79.6		63.7	
2003	1	03/04/03	60.6		48.9	
2003	1	02/06/03	76.6		60.2	
2002	4	12/30/02	89.9	YES	72.8	
2002	4	12/23/02	87.8	YES	64.3	
2002	4	12/17/02	81.7	YES	46.7	
2002	4	12/10/02	62.7		51.8	
2002	4	12/03/02	66.0		64.4	
2002	4	11/26/02	75.3		75.1	
2002	4	11/19/02	76.2		81.3	YES
2002	4	11/07/02	79.6		62.1	
2002	4	10/29/02	72.5		67.9	
2002	4	10/22/02	56.9		54.2	
2002	4	10/15/02	52.9		58.3	
2002	4	10/08/02	59.1		63.4	
2002	4	10/01/02	58.2		67.9	
2002	3	09/24/02	105.0	YES	100.0	YES
2002	3	09/17/02	98.3	YES	101.0	YES
2002	3	09/10/02	121.0	YES	119.0	YES
2002	3	09/03/02	120.0	YES	130.0	YES
2002	3	08/27/02	125.0	YES	118.0	YES
2002	3	08/20/02	114.0	YES	130.0	YES
2002	3	08/13/02	183.0	YES		

EXHIBIT 6

PORTSMOUTH WATER AND FIRE DISTRICT

NWD DISTRIBUTION SYSTEM TTHMs AS TESTED BY PWFD

YEAR	QUARTER	DATE	S&S FABRICS 1 MARITIME DR. PORTSMOUTH (MELVILLE)	EXCEEDS 80 PPB	LAW OFFICES DAVID F. FOX 850 AQUIDNECK AVE. MIDDLETOWN (HIGH SERVICE AREA)	EXCEEDS 80 PPB
2002	3	08/06/02	170.0	YES	132.0	YES
2002	3	07/30/02	161.0	YES	166.0	YES
2002	3	07/23/02	154.0	YES	155.0	YES
2002	3	07/16/02	117.0	YES	119.0	YES
2002	3	07/09/02	85.7	YES	227.0	YES
2002	3	07/02/02	168.0	YES	218.0	YES
2002	2	06/25/02	128.0	YES	86.2	YES
2002	2	06/19/02	135.0	YES	94.3	YES
2002	2	06/11/02	130.0	YES	136.0	YES
2002	2	06/04/02	139.0	YES	157.0	YES
2002	2	05/28/02	215.0	YES	226.0	YES
2002	2	05/21/02	168.0	YES	157.0	YES
2002	2	05/14/02	169.0	YES	156.0	YES
2002	2	05/07/02	117.0	YES	127.0	YES
2002	2	04/23/02	103.0	YES		
2002	2	04/09/02	117.0	YES		
2002	1	03/26/02	74.3			
2002	1	03/19/02	67.1			
2002	1	03/12/02	63.4			

EXHIBIT 7

TTHM FORMATION AT LV-WTP

EXHIBIT 7

PORTSMOUTH WATER AND FIRE DISTRICT

TTHM FORMATION AT LV-WTP

YEAR	QTR	DATE	LV-WTP EFFLUENT	PWFD METER PIT AT LV WTP	EXCEEDS 80 PPB	NWD MEDIUM SERVICE AREA AT LV-WTP	EXCEEDS 80 PPB
2004	1	03/02/04	9.7	49.4		57.7	
2004	1	02/03/04	4.6	37.4		40.5	
2004	1	01/06/04	6.1	35.3		38.7	
2003	4	12/02/03	4.2	45.3		47.1	
2003	4	11/24/03	4.7	51.8		44.5	
2003	4	11/18/03	5.2	51.1		47.5	
2003	4	11/04/03	14.7	66.9		60.4	
2003	4	10/07/03	8.1	53.8		53.6	
2003	4	10/01/03	10.2	64.6		68.9	
2003	3	09/23/03	12.2	61.3		74.8	
2003	3	09/16/03	9.8	65.9		74.9	
2003	3	09/09/03	8.7	72.0		81.1	YES
2003	3	09/02/03	10.8	83.8	YES	91.6	YES
2003	3	08/26/03	15.1	107.0	YES	98.2	YES
2003	3	08/19/03	19.2	99.8	YES	101.0	YES
2003	3	08/12/03	17.3	66.0		74.1	
2003	3	08/05/03	12.3	68.8		78.2	
2003	3	07/29/03	12.2	69.5		76.4	
2003	3	07/22/03	11.6	69.1		79.5	
2003	3	07/15/03	14.5	86.7	YES	80.0	YES
2003	3	07/08/03	11.7	78.6		79.3	
2003	3	07/01/03	16.4	81.8	YES	68.1	

EXHIBIT 8

NWD LETTER OF JUNE 3, 2002
RE: TTHM COMPLIANCE EVALUATION

THE CITY OF NEWPORT, RHODE ISLAND - AMERICA'S FIRST RESORT
DEPARTMENT OF PUBLIC WORKS

Julia A. Forgue, PE
Director

Utilities Division
(401) 847-0154

Engineering & Operations
Division, *(401) 846-9600 x 224*

Clean City Program
(401) 849-2380

Director's Office
(401) 847-0154
(401) 846-0947 Fax

June 3, 2002

Mr. William McGlinn, PE
General Manager
Portsmouth Water & Fire District
P.O. Box 99
Portsmouth, RI 02871-0099

RE: Regulatory Compliance at the Lawton Valley Water Treatment Plant

Dear Mr. McGlinn:

This letter is to advise the Portsmouth Water and Fire District of Newport Water Division's position regarding regulatory compliance at the Lawton Valley Water Treatment Plant. As you have been informed, Newport Water intends to proceed with a rate filing this summer. Included within the filing will be funding request for a Compliance Evaluation of the Lawton Valley Water Treatment Plant. Specifically, the study will include a determination of whether the plant's existing processes can meet future regulations, and if not, preliminary evaluation of alternative processes. The study will include:

- water quality testing (TOC, disinfection byproducts, etc.)
- review of plant operating data and compliance records
- analysis of ability of existing process to meet future regulations
- disinfection profiling
- identification and preliminary evaluation of alternative processes

To support the evaluation of alternative processes to meet the regulations, an audit of the existing facility will be conducted. The audit will assess structural, electrical, architectural, instrumentation and control, and mechanical systems for conditions, adequacy, and code compliance.

We at Newport Water recognize that the Lawton Valley Water Treatment Plant originally built c.1940's has never undergone a major process change. The plant is currently meeting drinking water standards, but new regulations will be coming into effect over the next 5 to 10 years. We consider the Compliance Evaluation of the Lawton Valley Water Treatment Plant to be essential to the objective of Newport Water to continue to provide in the future the safest and most reliable drinking water possible.

Very truly yours,

Julia A. Forgue, PE
Director of Public Works

JAF/cab
Cc: Joseph Nicholson, Acting City Manager
Frank Flaherty, Flaherty Orton & Flaherty
Al Mancini, RI Public Utilities Commission

CC: AB
D Fox
G. PETROS

EXHIBIT 9

PWFD PUBLIC NOTICES AND NEWSPAPER ARTICLES RE: TTHM NOTICES OF VIOLATION

FOURTH QUARTER 2002

These two public notices are being sent to you by the Portsmouth Water and Fire District (PWFD)
State Water System ID# 1592022. Sent February 07, 2003.

Some water customers of the Newport Water Department and the Naval Station Newport water system, particularly in the Redwood Farms, Bay View and Melville areas, in addition to properties with private wells in Portsmouth, may receive this public notice, even though they are not customers of PWFD. This over-coverage is unavoidable in our effort to ensure that all potential water users of PWFD receive these important public notices through a Postal Customer mailing.

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Portsmouth Water and Fire District Has Levels of
Total Trihalomethanes (TTHMs) Above Drinking Water Standards

Our water system recently violated a drinking water standard. Although this is not an emergency, as our customers, you have a right to know what happened, what you should do, and what we are doing to correct the situation.

The Portsmouth Water and Fire District (PWFD) routinely monitors for the presence of drinking water contaminants. The average of testing results taken during the four quarters of calendar year 2002 show that our system exceeded the standard, or maximum contaminant level (MCL), for TTHMs. The Environmental Protection Agency (EPA) standard for TTHMs is 0.080 milligrams per liter (mg/l). PWFD's average level of TTHMs for the four quarters in 2002 was 0.089 mg/l.

What should I do?

You do not need to use an alternate (i.e., bottled) water supply. You do not need to boil your water or take other corrective action. However, if you have specific health concerns, consult your doctor.

What does this mean?

This is not an emergency or immediate risk. If it had been, you would have been notified immediately. None of our testing has shown disease-causing organisms in the drinking water.

Where disinfection is used in the treatment of drinking water, disinfectants (chlorine) combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). EPA sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THMs) and haloacetic acids (HAAs).

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

Many water systems treat their water with a chemical disinfectant, such as chlorine, in order to inactivate pathogens that cause disease. The public health benefits of chlorine disinfection practices are significant and well-recognized. One hundred years ago, typhoid and cholera were common throughout American cities and disinfection was a major factor in reducing these epidemics. However, disinfection poses risks of its own. Since the discovery of DBPs in drinking water in 1974, numerous toxicological studies have been conducted that show some DBPs to be carcinogenic and/or cause reproductive or developmental effects in laboratory animals. In addition, epidemiological studies suggest that DBPs may be reproductive toxicants in humans under appropriate exposure conditions, however, the epidemiological database remains sparse, and is not adequate to infer that a causal relationship exists for any specific by-product or outcome. While many of these studies have been conducted at high doses, the weight-of-evidence indicates that DBPs present a potential public health problem. Consequently, one of the most complex questions facing water supply professionals is how to reduce risks from disinfectants and DBPs while providing increased protection against microbial contaminants.

What happened? What is being done?

PWFD purchases all of its water from the Newport Water Department (Newport Water), which owns and operates the Lawton Valley Water Treatment Plant (LV-WTP) in Portsmouth. The TTHM levels are the result of the organic content of the raw water, the chlorination and treatment processes at the LV-WTP, and the hydraulics at the LV-WTP and the PWFD system, and largely form prior to purchase by PWFD. PWFD has taken the following steps to address the high TTHM levels:

- The amount of chlorine added to the water from time to time by PWFD has been reduced while still ensuring reliable bacteriological control.
- PWFD has requested Newport Water to modify its plant operations to the extent possible and permissible by regulations in an effort to minimize the production of DPBs.
- PWFD has requested Newport Water to conduct a comprehensive evaluation of the LV-WTP to determine what improvements are required to reduce TTHMs on both a short and long-term basis. Such a study by Newport Water is in the planning stages.
- PWFD has sought, and will continue to seek, the assistance of the Rhode Island Public Utilities Commission, the Rhode Island Department of Health and the EPA to ensure that everything possible is being done to reduce the production of TTHMs.
- PWFD has retained a consulting engineer to investigate the possibility of re-treating the water purchased from Newport Water in order to lower the TTHM levels.

There are no other reasonable, immediate actions PWFD can take to reduce the level of DPBs in the water. However, PWFD's Administrative Board is committed to resolving the TTHM problem in the most expeditious manner possible.

PWFD is required to test for TTHMs on a quarterly basis. It will likely take several quarters of testing with improved levels of TTHMs for PWFD to be in compliance with the standard.

How do I find out more about the problem?

For more information, please contact William J. McGlinn, General Manager and Chief Engineer of the Portsmouth Water and Fire District at (401) 683-2090, or write to the Portsmouth Water and Fire District, 1944 East Main Road, P. O. Box 99, Portsmouth, RI 02871. You may also want to visit the EPA web site at http://www.epa.gov/ebtpages/watedrinkingwater.html or call the EPA Safe Drinking Water Hotline (800-426-4791).

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

The Newport (R.I.) Daily News, February 8-9, 2003

Portsmouth water fails EPA standard

Utility chief assures customers water is safe

By Anne Kumar
Daily News staff

PORTSMOUTH — Portsmouth Water and Fire District customers will receive notices next week reporting that the district has violated the Environmental Protection Agency's Safe Water Drinking Act.

Test results from 2002 show that the system is out of compliance with the new total Trihalomethane (THM) standard, which was reduced from 100 parts per billion to 80 as of Jan. 1. On average, Portsmouth's water tested to have about 89 parts per billion.

"Had the standards not changed we'd be in compliance," said William McGlinn, the district's general manager and chief engineer.

THMs are byproducts of the chlorine that is added to drinking water to control bacteria levels. Chlorine reacts with organic material in the water and creates byproducts such as THMs, McGlinn said.

Portsmouth violated the same standard twice in 2000, McGlinn said, but it didn't appear that the problem would continue.

Despite the violation, the water is safe to drink, McGlinn said.

"This is not an emergency or immediate risk," the district advised in a press release. "Customers do not need to use an alternate water supply. Customers do not need to boil their water or take other corrective action. None of our testing has shown disease-causing organisms in the drinking water."

McGlinn said the problem is not only affecting Portsmouth. The district's water comes from the Lawton Valley Plant in Portsmouth and the Station One Plant in Newport, where most Aquidneck Island residents get their water. Newport, however, is not in violation.

"We're in violation, but we're buying the water this way so there isn't much we can do," McGlinn said. "The problem is island-wide, although Portsmouth is in violation now."

The district's administrative board recently hired a consulting engineer to conduct a study of how to fix the problem, he said, adding that board members are hoping Newport will correct the problems at the water treatment plants.

"Improvements would affect everyone on the island and would be paid for by everyone on the island," McGlinn said. "The end goal here is to fix the problem, but it's going to take time."

Residents also will receive a second notice saying the district has exceeded the action level for lead, measured in three-year periods, established by the EPA. This is the first time the district has exceeded the level.

The lead, however, is not in the water, it is coming from inside the homeowners' plumbing, McGlinn said.

"This is not a violation," he said.

Exceeding an action level means the district needs to take action to lower the levels of lead. If it fails to complete a study by 2005, it will be in violation, McGlinn said.

The lead level is not enough to be harmful, he said. But residents may run their tap water until it is cold to ensure that the plumbing has been flushed out and that the water is fresh, he said.

McGlinn said he expects the study to begin in March.

District finds levels of lead, chemical exceed water standards

Adjustments are being made to reduce the levels, which the water district says do not pose an emergency or an immediate risk.

BY ALISHA A. PINA
JOURNAL STAFF WRITER

PORTSMOUTH — The Portsmouth Water and Fire District recently discovered its system had exceeded acceptable drinking water standards for lead and trihalomethanes, a byproduct created when water is treated with chlorine or another disinfectant.

The district is required by law to announce all violations to its customers; however, it says the contaminants do not pose an emergency or an immediate risk.

"Customers do not need to use an alternate water supply" such as bottled water, the district's news release read. "Customers do not need to boil their water or take other corrective action. None of our testing has shown disease-causing organisms in the drinking water.

"Although this is not an emergency, as our customers, you have a right to know what happened, what you should do and what we are doing to correct the situation."

The district routinely monitors its drinking water for contaminants. During last year's testing, the presence of the byproduct trihalomethane surpassed the federal Environmental Protection Agency's standard, which is.08 milligrams per liter. The district's average was.089-milligrams per liter.

The district's lead levels averaged.025 milligrams per liter, exceeding the EPA standard of.015 milligrams per liter. Previous testing since 1992 showed lead at below the accepted levels.

The district serves the majority of Portsmouth. It purchases all of its water from the Newport Water Department, which owns the Lawton Valley Water Treatment Plant.

The plant, like many treatment facilities around the country, uses chlorination and other treatment processes in order to "inactivate pathogens that cause diseases, such as cholera and typhoid — both which were common in the United States 100 years ago.

Yet, high amounts of trihalomethanes and lead can also cause health problems. People exposed to levels of trihalomethanes in excess of the EPA standard "over many years may experience problems with their liver, kidneys or central nervous system, and may have an increased risk of getting cancer," read the news release.

As for lead, which can be found in lead-based paint, air, soil, household dust, food, water and certain types of pottery, porcelain and pewter, the news release read:

"Lead can pose a significant risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells and kidneys. The greatest risk is to young children and pregnant women."

Lead in drinking water, although rarely the sole cause of lead poisoning, can significantly increase a person's total lead exposure, the district said. The EPA estimates that drinking water can make up 20 percent or more of a person's total exposure to lead. Lead enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and household plumbing.

The district has until Dec. 31, 2005 to minimize its lead levels. It has already hired a consulting engineer to evaluate the lead problem and develop corrosion control alternatives. The study will be completed in March and the district will have another lead testing in May or June.

The district is reducing the amount of chlorine added to the water from time to time to help alleviate the trihalomethanes issue. The district also asked that the Newport Water Department modify its plant operations and conduct a comprehensive evaluation at the plant.

In addition, the district suggests homeowners have their water tested for lead. If the lead exceeds the EPA standard, the district suggests some of the following precautions: let the water run from the tap before using it for drinking or cooking any time the water in a faucet has gone unused for mare than six hours, and try not to cook with, or drink water from, the hot water tap, because hot water can dissolve lead faster than cold water can.

For more information, call the district at 683-2090 or call the EPA Safe Drinking Water Hotline at 1-800-426-4791.

PORTSMOUTH

03-Legals

Meeting of the Board of Superintendents for the Regional Special Education Program
PORTSMOUTH ADMINISTRATION BLDG.
Middle Road
Portsmouth, RI
Date: Wed.; Feb. 12, 2003
Time: 9:00 a.m.

* AGENDA
- Approval of Friday, January 10, 2003 Board Minutes

* CORRESPONDENCE
* OLD BUSINESS
* Financial Report Update
* Medicaid Reimbursement Update
* Tuitions

* NEW BUSINESS
* Recommendations
- Non-Certified Personnel
* Non-Renewal Notices
* Program Highlights
* Evolving School-Based Needs

* EXECUTIVE SESSION 46.42-46-5(a)

Donald DeCosta, Director

The Meeting site is handicapped accessible. Individual requiring interpreter/reader services for the hearing impaired or auxiliary aides for the vision/speech impaired, must notify the office, 683-3570, at least 24 hours in advance of the meeting.

Middletown Public Schools
Middletown, Rhode Island
Thursday, February 13, 2003
MICHAEL S. PINTO

03-Legals

ments for permission to convert the existing second floor dwelling unit into 1,188 sq. ft. of additional standard restaurant seating area and provide 0 additional off-street parking spaces (9 additional off-street parking spaces required) applying to the property located at 78 Williams Street, Tax Assessor's Plat 28, Lot 81, (GB zone).

PETITION OF JOHN K. GROSVENOR, applicant; JULIE ANNE GLACKEN, owner; for a variance to the dimensional requirements for permission to construct a new 7 ft. x 15 ft., single-story sunporch addition which will increase the lot coverage from 21% to 23% (20% allowed) applying to the property located at 6 Conrad Court, Tax Assessor's Plat 39, Lot 280, (R-10 zone).

PETITION OF JOHN & KAREN NORBURY, applicants and owners; for a variance to the dimensional requirements for permission to construct a new 16 ft. x 14 ft. deck addition which will increase the lot coverage from 21% to 25% (20% allowed) applying to the property located at 10 Channing Street, Tax Assessor's Plat 10, Lot 28, (R-10 zone).

PETITION OF CHRISTINE SMITH, applicant and owner; for a variance to the dimensional requirements for permission to construct a 10 ft. x 14 ft. garden shed which will be located 5 ft. from the east property line, 2.5 ft. from the south property line (10 ft. required) and which will increase the lot coverage from 29% to 32% (20% allowed) apply-

03-Legals

Notice to Portsmouth Water and Fire District Customers
State Water System ID# 1592022

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER
Portsmouth Water and Fire District Has Levels of Total Trihalomethanes (TTHMs) Above Drinking Water Standards

Our water system recently violated a drinking water standard. Although this is not an emergency, as our customers, you have a right to know what happened, what you should do, and what we are doing to correct the situation.

The Portsmouth Water and Fire District (PWFD) routinely monitors for the presence of drinking water contaminants. The average of testing results taken during the four quarters of calendar year 2002 show that our system exceeded the standard, or maximum contaminant level (MCL), for TTHMs. The Environmental Protection Agency (EPA) standard for TTHMs is 0.080 milligrams per liter (mg/l). PWFD's average level of TTHMs for the four quarters in 2002 was 0.089 mg/l.

WHAT SHOULD I DO?

You do not need to use an alternate (i.e., bottled) water supply. You do not need to boil your water or take other corrective action. However, if you have specific health concerns, consult your doc-tor.

03-Legals

PWFD purchases all of its water from the Newport Water Department (Newport Water), which owns and operates the Lawton Valley Water Treatment Plant (LV-WTP), in Portsmouth. The TTHM levels are the result of the organic content of the raw water, the chlorination and treatment processes at the LV-WTP and the hydraulics at the LV-WTP and the PWFD system, and largely form prior to purchase by PWFD. PWFD has taken the following steps to address the high TTHM levels:

* The amount of chlorine added to the water from time to time by PWFD has been reduced while still ensuring reliable bacteriological control.

* PWFD has requested Newport Water to modify its plant operations to the extent possible and permissible by regulations in an effort to minimize the production of DPBs.

* PWFD has requested Newport Water to conduct a comprehensive evaluation of the LV-WTP to determine what improvements are required to reduce TTHMs on both a short and long-term basis. Such a study by Newport Water is in the planning stages.

* PWFD has sought, and will continue to seek, the assistance of the Rhode Island Public Utilities Commission, the Rhode Island Department of Health and the EPA to ensure that everything possible is being done to reduce the production of TTHMs.

03-Legals

after we have completed the comprehensive treatment program. Fortunately, the District does not have any known lead service lines.

If you have any questions about how we are carrying out the requirements of the lead regulation please give us a call at (401) 683-2090. This material explains the simple steps you can take to protect you and your family by reducing your exposure to lead in drinking water.

HEALTH EFFECTS OF LEAD

Lead is a common metal found throughout the environment in lead-based paint, air, soil, household dust; food; certain types of pottery porcelain and pewter, and water. Lead can pose a significant risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells and kidneys. The greatest risk is to young children and pregnant women. Amounts of lead that won't hurt adults can slow down normal mental and physical development of growing bodies. In addition, a child at play often comes into contact with sources of lead contamination - like dirt and dust - that rarely affect an adult. It is important to wash children's hands and toys often, and to try to make sure they only put food in their mouths.

LEAD IN DRINKING WATER

1. Lead in drinking water, although rarely the sole

03-Legals

tions:

a. Let the water run from the tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than six hours. The longer water resides in your home's plumbing the more lead it may contain. Flushing the tap means running the cold water faucet until the water gets noticeably colder, usually about 15-30 seconds. If your house has a lead service line to the water main, you may have to flush the water for a longer time, perhaps one minute, before drinking. As mentioned earlier, the District does not have any know lead water service lines. Although toilet flushing or showering flushes water through a portion of your home's plumbing system, you still need to flush the water in each faucet before using it for drinking or cooking. Flushing tap water is a simple and inexpensive measure you can take to protect your family's health. It usually uses less than one or two gallons of water with a minimal cost per month. To conserve water, fill a couple of bottles for drinking water after flushing the tap, and whenever possible, use the first flush water to wash the dishes or water the plants. If you live in a high-rise building, letting the water flow before using it may not work to lessen your risk from lead. The plumbing systems have more, and sometimes larger, pipes than smaller buildings. Ask your landlord for help in locating the source of the lead and for advice on reducing the lead level.

03-Legals

the owner's expense. If we replace only the portion of the line that we own, we also are required to notify you in advance and provide you with information on the steps you can take to minimize exposure to any temporary increase in lead levels that may result from the partial replacement, to take a follow-up sample at our expense from the line within 72 hours after the partial replacement and to mail or otherwise provide you with the results of that sample within three business days of receiving the results. Acceptable replacement alternatives include copper, steel, iron, and plastic pipes.

f. Have an electrician check your wiring. If grounding wires from the electrical system are attached to your pipes, corrosion may be greater. Check with a licensed electrician or your local electrical code to determine if your wiring can be grounded elsewhere. DO NOT attempt to change the wiring yourself because improper grounding can cause electrical shock and fire hazards.

3. The steps described above will reduce the lead concentrations in your drinking water. However, if a water test indicates that the drinking water coming from your tap contains lead concentrations in excess of 15 ppb after flushing, or after we have completed our actions to minimize lead levels, then you may want to take the following additional measures:

a. Purchase or lease a home treatment device. Home treatment devices

03-Legals

Water and Fire District, 1944 East Main Road, P.O. Box 99, Portsmouth, RI 02871. You may also want to visit the EPA web site at http://www.epa.gov/ebt-pages/watedrinkingwater.html or call the EPA Safe Drinking Water Hotline (800-426-4791).

CITY OF NEWPORT, RHODE ISLAND
PURCHASING DIVISION
NOTICE TO BIDDERS

One (1) FOUR-DOOR PASSENGER VEHICLE EQUIPPED WITH "POLICE PACKAGE"
BID 70288

Sealed bids for furnishing the City of Newport, Rhode Island with One (1) Four-Door Passenger Vehicle equipped with "Police Package", in accordance with all terms and specifications contained herein, will be received in the Purchasing Office, City Hall, 43 Broadway, Newport, R. I., until:

Two (2:00) o'clock p.m., Local Time
Tuesday, 25 February 2003

at which time they will be publicly opened and read.

Proposals must be submitted in sealed envelopes addressed to the Purchasing Office, City Hall, 43 Broadway, Newport, R. I. 02840-2798, and must be plainly marked in the lower left hand corner, "Passenger Vehicle # 70288".

Documents may be exam-

CONFERENCE ROOM
6:30 p.m.

Budget Workshop

- Call to Order
- Executive Session 42-46-5 (a) 1,2,8,9
- Budget Workshop
  - o Facilities
  - o Linden School
- Executive Session 42-46-5 (a) 1,2,8,9

Citizens desiring to address items which are included on the agenda of this School Committee meeting should advise the Superintendent of Schools or the Chairperson of the School Committee prior to the start of the meeting.

CITY OF NEWPORT
BOARD OF REVIEW
NOTICES

NOTICE is hereby given that there will be a Public Hearing held at City Hall in the Council Chambers on Monday, February 24, 2003 at 7:00 p.m. in the matter of granting the following petitions now on file in the Office of Planning, Zoning, Development and Inspections, third floor, City Hall, Newport, Rhode Island:

APPEAL OF MICHAEL E. & BARBARA B. CAMPBELL, appellants and owners; appealing the decision of the Historic District Commission denying a small addition and window changes applying to the property located at 8 Cliff Terrace, Tax Assessor's Plat 31, Lot 51, (R-10 zone).

APPEAL OF VINCENT MARCELLO & BELLEVUE REALTORS, appellants and owners; appealing the decision of the Historic District Commission approving a second story addition applying to the property located at 152-154 Mill Street, Tax Assessor's Plat 25, Lot 131, (GB zone).

PETITION OF WILLIAM J. & MARGERET E. GEARON, applicants and owners; for a variance to the dimensional requirements for permission to construct a 13 ft. x 22.5 ft., single-story bed/bathroom addition which will be located 8.5 ft. from the east property line (10 ft required) and which will increase the lot coverage from 28% to 38% (20% allowed) applying to the property located on 2 Berkeley Terrace, Tax Assessor's Plat 33, Lot 80, (R-10 zone).

PETITION OF SSR CORPORATION, applicant and owner; for a variance to the off-street parking requiring to the property located at 91 Second Street, Tax Assessor's Plat 9, Lot 309, (R-10 zone).

PETITION OF ANDREW CLARK, applicant and owner; for a variance to the dimensional requirements for permission to remove the existing single-story rear addition and construct a new 24.5 ft. x 20 ft., two-story, kitchen/dining room/bedroom addition which will be located 4 ft. from the west property line (10 ft. required) and which will increase the lot coverage from 33% to 37% (20% allowed) applying to the property located at 38 Hammond Street, Tax Assessor's Plat 35, Lot 137 (R-10 zone).

PETITION OF PAUL BERNARD, applicant and owner; for a variance to the dimensional requirements for permission to construct a 556 sq. ft. second floor kitchen/deck addition which will increase the lot coverage from 30% to 47% (40% allowed) applying to the property located at 485 Thames Street, Tax Assessor's Plat 32, Lot 156, (GB zone).

PETITION OF STEVE C. WALSH, applicant and KAREN SAMMONS, owner; for a variance to the dimensional requirements for permission to construct a 16 ft. x 20 ft. sun porch and an 8 ft. x 22 ft. garage addition, which will increase the lot coverage from 20% to 24% (20% allowed), applying to the property located at 112 Kay Boulevard, Tax Assessor's Plat 11, Lot 720 (R-10 zone).

PETITION OF NANCY & PETER DUGAN, applicants and owners; for a variance to the dimensional requirements for permission to construct a 10 ft. x 14 ft. addition and a 10 ft. x 10 ft. shed, applying to the property located at 15 Canonicus Avenue, Tax Assessor's Plat 7, Lot 563 (R-10 zone).

Petitions will be heard in an order to be determined by the Chairman at 7:00 p.m. Opportunity to be heard will be given to all interested in the granting or rejecting of the aforesaid petitions.

TDD Voice/Hearing Impaired: 841-0444

Please advertise Monday, February 10th & February 17th, 2003
Please bill the Planning Department, Account #912
Please forward tear sheet to Planning Dept., City Hall, 43 Broadway, Newport, RI 02840

WHAT DOES THIS MEAN?

This is not an emergency or immediate risk. If it had been, you would have been notified immediately. None of our testing has shown disease-causing organisms in the drinking water.

Where disinfection is used in the treatment of drinking water, disinfectants (chlorine) combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). EPA sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THMs) and haloacetic acids (HAAs).

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

Many water systems treat their water with a chemical disinfectant, such as chlorine, in order to inactivate pathogens that cause disease. The public health benefits of chlorine disinfection practices are significant and well-recognized. One hundred years ago, typhoid and cholera were common throughout American cities and disinfection was a major factor in reducing these epidemics. However, disinfection poses risks of its own.

Since the discovery of DBPs in drinking water in 1974, numerous toxicological studies have been conducted that show some DBPs to be carcinogenic and/or cause reproductive or developmental effects in laboratory animals. In addition, epidemiological studies suggest that DBPs may be reproductive toxicants in humans under appropriate exposure conditions, however, the epidemiological database remains sparse, and is not adequate to infer that a causal relationship exists for any specific by-product or outcome. While many of these studies have been conducted at high doses, the weight-of-evidence indicates that DBPs present a potential public health problem. Consequently, one of the most complex questions facing water supply professionals is how to reduce risks from disinfectants and DBPs while providing increased protection against microbial contaminants.

WHAT HAPPENED? WHAT IS BEING DONE?

* PWFD has retained a consulting engineer to investigate the possibility of retreating the water purchased from Newport Water in order to lower the TTHM levels.

There are no other reasonable, immediate actions PWFD can take to reduce the level of DPBs in the water. However, PWFD's Administrative Board is committed to resolving the TTHM problem in the most expeditious manner possible.

PWFD is required to test for TTHMs on a quarterly basis. It will likely take several quarters of testing with improved levels of TTHMs for PWFD to be in compliance with the standard.

HOW DO I FIND OUT MORE ABOUT THE PROBLEM?

For more information, please contact William J. McGlinn, General Manager and Chief Engineer of the Portsmouth Water and Fire District at (401) 683-2090, or write to the Portsmouth Water and Fire District, 1944 East Main Road, P.O. Box 99, Portsmouth, RI 02871. You may also want to visit the EPA web site at http:www.epa.gov/ebtpages/watedrinkingwater.html or call the EPA Safe Drinking Water Hotline (800-426-4791).

LEAD AND COPPER
PUBLIC EDUCATION
FOR PORTSMOUTH
WATER AND FIRE
DISTRICT CUSTOMERS

INTRODUCTION

The United States Environmental Protection Agency (EPA) and the Portsmouth Water and Fire District public water system are concerned about lead in your drinking water. Although most homes have very low levels of lead in their drinking water, some homes in the community have lead levels above the EPA action level of 15 parts per billion (ppb), or 0.015 milligrams of lead per liter of water (mg/L). Under Federal law we are required to have a program in place to minimize lead in your drinking water by December 31, 2005. This program includes corrision control treatment, source water treatment, and public education. We are also required to replace the portion of each lead service line that we own if the line contributes lead concentrations of more than 15 ppb cause of lead poisoning, can significantly increase a person's total lead exposure, particularly the exposure of infants who drink baby formulas and concentrated juices that are mixed with water. The EPA estimates that drinking water can make up 20 percent or more of a person's total exposure to lead.

2. Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of the corrosion, or wearing away of materials containing lead in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipe, brass and chrome plated brass faucets, and in some cases, pipes made of lead that connect your house to the water main (service lines). In 1986, Congress banned the use of lead solder containing greater than 0.2% lead, and restricted the lead content of faucets, pipes and other plumbing materials to 8.0%.

3. When water stands inlead pipes or plumbing systems containing lead for several hours or more, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or later in the afternoon after returning from work or school, can contain fairly high levels of lead.

STEPS YOU CAN TAKE IN THE HOME TO REDUCE EXPOSURE TO LEAD IN DRINKING WATER

1. Despite our best efforts mentioned earlier to control water corrosivity and remove lead from the water supply, lead levels in some homes or buildings can be high. To find out whether you need to take action in your own home, have your drinking water tested to determine if it contains excessive concentrations of lead. Testing the water is essential because you cannot see, taste, or smell lead in drinking water. Some local laboratories that can provide this service are listed at the end of this notice. For more information on having your water tested, please call the Portsmouth Water and Fire District at (401) 683-2090.

2. If a water test indicates that the drinking water drawn from a tap in your home contains lead above 15 ppb, or if you are unsure of the level, then you should take the following precau-

b. Try not to cook with, or drink water from the hot water tap. Hot water can dissolve more lead more quickly than cold water. If you need hot water, draw water from the cold tap and heat it on the stove.

c. Remove loose lead solder and debris from the plumbing materials installed in newly constructed homes, or homes in which the plumbing has recently been replaced, by removing the faucet strainers from all taps and running the water from 3 to 5 minutes. Thereafter, periodically remove the strainers and flush out any debris that has accumulated over time.

d. If your copper pipes are joined with lead solder that has been installed illegally since it was banned in 1986, notify the plumber who did the work and request that he or she replace the lead solder with lead-free solder. Lead solder looks dull gray, and when scratched with a key looks shiny. In addition, notify the Division of Drinking Water Quality, RI Dept. of Health about the violation.

e. Determine whether or not the service line that connects your home or apartment to the water main is made of lead. Although the Portsmouth Water and Fire District does not have any know lead service lines, the best way to determine if your service line is made of lead is by either hiring a licensed plumber to inspect the line or by contacting the plumbing contractor who installed the line. You can identify the plumbing contractor by checking the town's record of building permits which should be maintained in the files of the Building Official at the Portsmouth Town Hall. A licensed plumber can at the same time check to see if your home's plumbing contains lead solder, lead pipes, or pipe fittings that contain lead. The Portsmouth Water and Fire District also maintain records of the materials located in the distribution system. If the service line that connects your dwelling to the water main contributes more than 15 ppb to drinking water, after our comprehensive treatment program is in place, we are required to replace the portion of the line we own. If the line is only partially owned by our water system, we are required to provide the owner of the privately-owned portion with information on how to replace that portion of the service line, and offer to replace same at are limited in that each unit treats only the water that flows from the faucet to which it is connected, and all of the devices require periodic maintenance and replacement. Devices such as reverse osmosis systems or distillers can effectively remove lead from your drinking water. Some activated carbon filters may reduce lead levels at the tap, however all lead reduction claims should be investigated. Be sure to check the actual performance of a specific home treatment device before and after installing the unit.

b. Purchase bottled water for drinking and cooking.

4. You can consult a variety of sources for additional information. Your family doctor or pediatrician can perform a blood test for lead and provide you with information about the health effects of lead. State and local government agencies that can be contacted include:

a. The Division of Drinking Water Quality within the Rhode Island Department of Health at 222-6867 can provide you with information about your community's water supply, and a list of local laboratories that have been certified by the Health Department for testing water quality;

b. The Town of Portsmouth building official at 683-3611 can provide you with information about building permit records that should contain the names of plumbing contractors that plumbed your home; and

c. The Office of Environmental Health Risk Assessment within the RI Department of Health at 222-3424 can provide you with information about the health effects of lead and how you can have your child's blood tested.

5. The following is a list of two State approved laboratories in our area that you can call to have your water tested for lead:

a. ESS Laboratory, Cranston, RI at 461-4486
b. R.I. Analytical, Warwick, RI at 737-8500

The District can assist you in obtaining a water sample from your tap and having it tested for lead.

QUESTIONS?

For more information, please contact William J. McGlinn, General manager and Chief Engineer of the Portsmouth Water and Fire District at (401) 683-2090, or write to the Portsmouth

ined at the office of the Purchasing Agent for the City of Newport, City Hall, 43 Broadway Newport RI 02840, between the hours of 9:00 AM and 4:30 PM daily except Saturdays, Sundays and Legal Holidays.

Marc R Aglin
Purchasing Agent
(401) 846-9600,ext. 310

TDD Voice/Hearing Impaired: 841-0444
WEB Address "cityofnewport.com"

NOTICE

Notice is hereby given that there will be a meeting of the Historic District Commission on Tuesday, February 18, 2003 at 7:15 p.m. in the City Hall Council Chambers on the second floor.

STATE OF RHODE ISLAND
Probate Court of the Town of Portsmouth, RI.
NOTICE
OF MATTERS PENDING AND FOR HEARING IN SAID COURT
The Court will be in session at Town Council Chambers, Town Hall, 2200 East Main Road on the dates specified in notices below at 9 AM for hearing said matters.

ESCOBAR, Mary R., Estate of. Probate of Will for Public Hearing, February 11, 2003.

KAZANJIAN, Alberta Copeland, Estate of. Probate of Will for Public Hearing, February 11, 2003.

MURPHY, Lottie, Estate of. Executrix's Sixth and Final Account for Public Hearing February 11, 2003.

IZZO, Geraldine, Estate of. Antoinette Carvalho, 9 Pontiac Road, Narragansett RI 02882 has qualified as Guardian of the Person and Estate. Creditors must first file their claim with the Guardian or the Attorney of Record, Charles J. Levesque, Esq., 136 West Main Road, Middletown, RI 02842 and file a copy of said claim in the Office of the Probate Clerk in the time provided for by law beginning January 27, 2003.

FIRST QUARTER 2003

This public notice is being sent to you
by the
Portsmouth Water and Fire District

State Water System ID# 1592022

Sent March 19, 2003

Some water customers of the Newport Water Department and the Naval Station Newport water system, particularly in the Redwood Farms, Bay View and Melville areas, in addition to properties with private wells in Portsmouth, may receive this public notice, even though they are not customers of PWFD. This over-coverage is unavoidable in our effort to ensure that all potential water users of PWFD receive these important public notices through a Postal Customer mailing.

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

The Portsmouth Water and Fire District Has Levels of Total Trihalomethanes (TTHMs) Above Drinking Water Standards

Our water system recently violated a drinking water standard. Although this is not an emergency, as our customers, you have a right to know what happened, what you should do, and what we are doing to correct the situation.

The Portsmouth Water and Fire District (PWFD) routinely monitors for the presence of drinking water contaminants. The average results of tests taken during the last four quarters show that our system exceeded the standard, or maximum contaminant level (MCL), for TTHMs. The Environmental Protection Agency (EPA) standard for TTHMs is 0.080 milligrams per liter (mg/l). PWFD's average level of TTHMs for the last four quarters was 0.090 mg/l. The average TTHM result for the most recent quarter measured on February 6, 2003 is 0.065 mg/l.

WHAT SHOULD I DO?

You do not need to use an alternate (i.e., bottled) water supply. You do not need to boil your water or take other corrective action. However, if you have specific health concerns, consult your doctor.

WHAT DOES THIS MEAN?

This is not an emergency or immediate risk. If it had been, you would have been notified immediately. None of our testing has shown disease-causing organisms in the drinking water.

Where disinfection is used in the treatment of drinking water, disinfectants (chlorine) combine with organic and inorganic matter present in water to form chemicals called

disinfection byproducts (DBPs). EPA sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THMs) and haloacetic acids (HAAs).

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

Many water systems treat their water with a chemical disinfectant, such as chlorine, in order to inactivate pathogens that cause disease. The public health benefits of chlorine disinfection practices are significant and well-recognized. One hundred years ago, typhoid and cholera were common waterborne diseases throughout American cities and disinfection was a major factor in reducing these epidemics. However, disinfection poses risks of its own. Since the discovery of DBPs in drinking water in 1974, numerous toxicological studies have been conducted that show some DBPs to be carcinogenic and/or cause reproductive or developmental effects in laboratory animals. In addition, epidemiological studies suggest that DBPs may be reproductive toxicants in humans under appropriate exposure conditions, however, the epidemiological database remains sparse, and is not adequate to infer that a causal relationship exists for any specific by-product or outcome. While many of these studies have been conducted at high doses, the weight-of-evidence indicates that DBPs present a potential public health problem. Consequently, one of the most complex questions facing water supply professionals is how to reduce risks from disinfectants and DBPs while providing increased protection against microbial contaminants.

WHAT HAPPENED? WHAT IS BEING DONE?

PWFD purchases all of its water from the Newport Water Department (Newport Water), which owns and operates the Lawton Valley Water Treatment Plant (LV-WTP) in Portsmouth. The TTHM levels are the result of the organic content of the raw water, the chlorination and treatment processes at the LV-WTP, and the hydraulics at the LV-WTP and in the PWFD system, and largely form prior to purchase by PWFD. PWFD has taken the following steps to address the high TTHM levels:

- The amount of chlorine added to the water from time to time by PWFD has been reduced while still ensuring reliable bacteriological control.
- PWFD has requested Newport Water to modify its plant operations to the extent possible and permissible by regulations in an effort to minimize the production of DPBs.
- PWFD has requested Newport Water to conduct a comprehensive evaluation of the LV-WTP to determine what improvements are required to reduce TTHMs on both a short and long-term basis. Such a study by Newport Water is in the planning stages.
- PWFD has sought, and will continue to seek, the assistance of the Rhode Island Public Utilities Commission, the Rhode Island Department of Health and the EPA to ensure that everything possible is being done to reduce the production of TTHMs.

- PWFD has retained a consulting engineer to investigate the possibility of re-treating the water purchased from Newport Water in order to lower the TTHM levels.

There are no other reasonable, immediate actions PWFD can take to reduce the level of DPBs in the water. However, PWFD's Administrative Board is committed to resolving the TTHM problem in the most expeditious manner possible.

PWFD is required to test for TTHMs on a quarterly basis. It will likely take several quarters of testing with improved levels of TTHMs for PWFD to be in compliance with the standard.

HOW DO I FIND OUT MORE ABOUT THE PROBLEM?

For more information, please contact William J. McGlinn, General Manager and Chief Engineer of the Portsmouth Water and Fire District at (401) 683-2090, or write to the Portsmouth Water and Fire District, 1944 East Main Road, P. O. Box 99, Portsmouth, RI 02871. For general information on TTHMs, you may also want to call the EPA Safe Drinking Water Hotline (800-426-4791) or visit the EPA web site at http://www.epa.gov/ebtpages/watedrinkingwater.html.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

The Newport (R.I.) Daily News, Thursday, March 20, 2003

Portsmouth water fails EPA standard

By Anne Kumar
Daily News staff

PORTSMOUTH — Water from the Portsmouth Water and Fire District has violated a drinking water standard for the fourth time.

District customers will receive notices this week reporting that the district is out of compliance with the Environmental Protection Agency's new total Trihalomethane (THM) standard, which was reduced from 100 parts per billion to 80 as of Jan. 1. On average, Portsmouth water tested to have THMs at 89.9 parts per billion.

THMs are byproducts of the chlorine that is added to drinking water to control bacteria levels. Chlorine reacts with organic material in the water and creates byproducts such as THMs, said William McGlinn, the district's manager and chief engineer.

The last violation was announced in February and was based on results from the quarter ending Dec. 31, 2002. The second violation comes because the first quarter results are in and while those THM levels are below the standard, the EPA requires a four-quarter running average. Higher than average results in the second and third quarters of 2002 have pushed the districts average slightly above the standard.

Portsmouth violated the same standard twice in 2000, McGlinn said.

But the water is still safe to drink, McGlinn said.

"This is not an emergency or immediate risk and district customers do not need to use an alternate water supply," according to a district press release. "Customers do not need to boil their water or take corrective action. None of the district's testing has shown disease-causing organisms in the drinking water."

According to the EPA, drinking water that contains THMs above the standard over many years may cause liver, kidney, or central nervous system problems from some people. It may also cause an increased risk in getting cancer, according to the press release.

The district buys all of its water from the Newport Water Department, which owns and operates the Lawton Valley Treatment Plant in Portsmouth.

In order to solve the problems, the district has reduced the amount of chlorine added to the water and asked Newport water officials to modify plant operations to fix the problems. District employees have also sought assistance from the Public Utilities Commission, the state Department of Health and the EPA and they have hired a consulting engineer to look at possible solutions.

McGlinn said Newport water officials are doing what they can now to help keep the THM levels low.

The next tests will be done in April, McGlinn said.

"If the numbers stay low we will be in compliance," McGlinn said. "April may bring us under 80 (parts per billion) but it will be close and it's always possible to get higher numbers."

March 20, 2003 Sakonnet Times

Portsmouth water in violation again

Officials say that water is still safe to drink

PORTSMOUTH — For the second time in as many months, the Portsmouth Water and Fire District (PWFD) has violated a drinking water standard.

According to the PWFD, though, the water is still safe to drink and residents should not be alarmed.

The PWFD announced Tuesday that the district exceeded the maximum contaminant level for total trihalomethanes (TTHMs) over the last four quarters, which includes the first quarter of 2003.

The Environmental Protection Agency (EPA) standard for TTHMs is 0.080 milligrams per liter (mg/l). The district's average level of TTHMs for the last four quarters was 0.090 mg/l.

The TTHM results for the fourth quarter of 2002 and the first quarter of 2003 are 0.066 mg/l and 0.065 mg/l respectively, which are under the EPA standard. Because of higher levels of TTHMs measured in the second and third quarters of 2002 of 0.092 mg/l and 0.137 mg/l, respectively, PWFD's four-quarter average is still above the standard.

Last month, the district's four-quarter average TTHM level was 0.89 mg/l.

TTHMs is a compound that is created when chlorine reacts with organic matter in water. PWFD General Manager William McGlinn said last month that TTHMs have been around since chlorine was first used to treat water in the early 1900s.

Last month Mr. McGlinn said that while Portsmouth was cited for a violation, other Aquidneck Island communities are very close to violating the EPA's THHM standards. In fact, Newport, he said, was very close to being in violation last year.

Because Portsmouth (and every other Aquidneck Island community) buys its water from Newport, the water already has a borderline level of THHMs. When it sits in shallow reservoirs and gets treated at older plants, like Lawton Valley in Portsmouth, chlorine has ample time to react with the organic matter in the water to form THHM.

The PWFD sent a written statement to customers Wednesday, alerting them of the situation. State and federal regulations require them to do so.

The PWFD said that customers do not need to use an alternate water supply or boil their water. None of the district's testing has shown disease-causing organisms in the drinking water.

For more information, contact William J. McGlinn, General Manager and Chief Engineer of the Portsmouth Water and Fire District at (401) 683-2090, or write to the Portsmouth Water and Fire District, 1944 East Main Road, P. O. Box 99, Portsmouth, RI 02871.

03-Legals

Accountability-Respect-Educational Equity-Students)

Notice to Portsmouth Water and Fire District Customers State Water System ID# 1592022 IMPORTANT

INFORMATION ABOUT YOUR DRINKING WATER

Portsmouth Water and Fire District Has Levels of Total Trihalomethanes (TTHMs) Above Drinking Water Standards.

Our water system recently violated a drinking water standard. Although this is not an emergency, as our customers, you have a right to know what happened, what you should do, and what we are doing to collect the situation.

The Portsmouth Water and Fire District (PWFD) routinely monitors for the presence of drinking water contaminants. The average results of tests taken during the last four quarters show that our system exceeded the standard, or maximum contaminant level (MCL), for TTHMs. The Environmental Protection Agency (EPA) standard for TTHMs is 0.080 milligrams per liter (mg/l). PWFD's average level of TTHMs for the four quarters in 2002 was 0.090 mg/l. The average TTHM result for the most recent quarter measured on February 6, 2003 is 0.065 mg/l.

WHAT SHOULD I DO?

You do not need to use an alternate (i.e., bottled) water supply. You do not need to boil your water or take other corrective action. However, if you have specific health concerns, consult your doctor.

WHAT DOES THIS MEAN?

This is not an emergency or immediate risk. If it had been, you would have been notified immediately. None of our testing has shown disease-causing organisms in the drinking water.

Where disinfection is used in the treatment of drinking water, disinfectants (chlorine) combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). EPA sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THMs) and haloacetic acids (HAAs).

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

Many water systems treat their water with a chemical disinfectant, such as chlorine, in order to inactivate pathogens that cause disease. The public health benefits of chlorine disinfection practices are significant and well-recognized. One hundred years ago, typhoid and cholera were common waterborne diseases throughout American cities and disinfection was a major factor in reducing these epidemics. However, disinfection poses risks of its own. Since the discovery of DBPs in drinking water in 1974, numerous toxicological studies have been conducted that show some DBPs to be carcinogenic and/or cause reproductive or developmental effects in laboratory animals. In addition, epidemiological studies suggest that DBPs may be reproductive toxicants in humans under appropriate exposure conditions, however, the epidemiological database remains sparse, and is not adequate to infer that a causal relationship exists for any specific by-product or outcome. While many of these studies have been conducted at high doses, the weight-of-evidence indicates that DBPs present a potential public health problem. Consequently, one of the most complex questions facing water supply professionals is how to reduce risks from disinfectants and DBPs while providing increased protection against microbial contaminants.

WHAT HAPPENED? WHAT IS BEING DONE?

PWFD purchases all of its water from the Newport Water Department (Newport Water), which owns and operates the Lawton Valley Water Treatment Plant (LV-WTP) in Portsmouth. The TTHM levels are the result of the organic content of the raw water, the chlorination and treatment processes at the LV-WTP, and the hydraulics at the LV-WTP and in the PWFD system, and largely form prior to purchase by PWFD. PWFD has taken the following steps to address the high TTHM levels:

*The amount of chlorine added to the water from time to time by PWFD has been reduced while still ensuring reliable bacteriological control.

*PWFD has requested Newport Water to modify its plant operations to the extent possible and permissible by regulations in an effort to minimize the production of DPBs.

*PWFD has requested Newport Water to conduct a comprehensive evaluation of the LV-WTP to determine what improvements are required to reduce TTHMs on both a short and long-term basis. Such a study by Newport Water is in the planning stages.

*PWFD has sought, and will continue to seek, the assistance of the Rhode Island Public Utilities Commission, the Rhode Island Department of Health and the EPA to ensure that everything possible is being done to reduce the production of TTHMs.

*PWFD has retained a consulting engineer to investigate the possibility of re-treating the water purchased from Newport Water in order to lower the TTHM levels.

There are no other reasonable, immediate actions PWFD can take to reduce the level of DPBs in the water. However, PWFD's Administrative Board is committed to resolving the TTHM problem in the most expeditious manner possible.

PWFD is required to test for TTHMs on a quarterly basis. It will likely take several quarters of testing with improved levels of TTHMs for PWFD to be in compliance with the standard.

HOW DO I FIND OUT MORE ABOUT THE PROBLEM?

For more information, please contact William J. McGlinn, General Manager and Chief Engineer of the Portsmouth Water and Fire District at (401) 683-2090, or write to the Portsmouth Water and Fire District, 1944 East Main Road, P.O. Box 99, Portsmouth, RI 02871. For general information on TTHMs, you may also want to call the EPA Safe Drinking Water Hotline (800-426-4791) or visit the EPA web site at http://www.epa.gov/ebtpages/watedrinkingwater.html.

Please share this information with all the other people who drink this water, especially those who may not have seen this notice. You can do this by posting this notice in a public place or distributing copies by hand or mail.

SECOND QUARTER 2003

This public notice is being sent to you
by the
Portsmouth Water and Fire District

State Water System ID# 1592022

Sent May 14, 2003

Some water customers of the Newport Water Department and the Naval Station Newport water system, particularly in the Redwood Farms, Bay View and Melville areas, in addition to properties with private wells in Portsmouth, may receive this public notice, even though they are not customers of the Portsmouth Water and Fire District. This over-coverage is unavoidable in our effort to ensure that all potential water users of the District receive these important public notices through a Postal Customer mailing.

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

The Portsmouth Water and Fire District Has Levels of Total Trihalomethanes (TTHMs) Above Drinking Water Standards

Our water system recently violated a drinking water standard. Although this is not an emergency, as our customers, you have a right to know what happened, what you should do, and what we are doing to correct the situation.

The Portsmouth Water and Fire District (PWFD) routinely monitors for the presence of drinking water contaminants. The average results of tests taken during the last four quarters show that our system exceeded the standard, or maximum contaminant level (MCL), for TTHMs. The Environmental Protection Agency (EPA) standard for TTHMs is 0.080 milligrams per liter (mg/l) measured as a four-quarter running average. PWFD's average level of TTHMs for the last four quarters was 0.083 mg/l. The average TTHM level for the most recent quarter measured on April 8, 2003, is 0.064 mg/l. The levels for the three prior quarters were 0.065 mg/l, 0.066 mg/l and 0.137 mg/l.

WHAT SHOULD I DO?

You do not need to use an alternate (i.e., bottled) water supply. You do not need to boil your water or take other corrective action. However, if you have specific health concerns, please consult your doctor.

WHAT DOES THIS MEAN?

This is not an emergency or immediate risk. If it had been, you would have been notified immediately. None of our testing has shown disease-causing organisms in the drinking water.

Where disinfection is used in the treatment of drinking water, disinfectants (chlorine) combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). EPA sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THMs) and haloacetic acids (HAAs).

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

Many water systems treat their water with a chemical disinfectant, such as chlorine, in order to inactivate pathogens that cause disease. The public health benefits of chlorine disinfection practices are significant and well-recognized. One hundred years ago, typhoid and cholera were common waterborne diseases throughout American cities and disinfection was a major factor in reducing these epidemics. However, disinfection poses risks of its own. Since the discovery of DBPs in drinking water in 1974, numerous toxicological studies have been conducted that show some DBPs to be carcinogenic and/or cause reproductive or developmental effects in laboratory animals. In addition, epidemiological studies suggest that DBPs may be reproductive toxicants in humans under appropriate exposure conditions, however, the epidemiological database remains sparse, and is not adequate to infer that a causal relationship exists for any specific by-product or outcome. While many of these studies have been conducted at high doses, the weight-of-evidence indicates that DBPs present a potential public health problem. Consequently, one of the most complex questions facing water supply professionals is how to reduce risks from disinfectants and DBPs while providing increased protection against microbial contaminants.

WHAT HAPPENED? WHAT IS BEING DONE?

PWFD purchases all of its water from the Newport Water Department (Newport Water), which owns and operates the Lawton Valley Water Treatment Plant (LV-WTP) in Portsmouth. The TTHM levels are the result of the organic content of the raw water, the chlorination and treatment processes at the LV-WTP, and the hydraulics at the LV-WTP and in the PWFD system, and largely form prior to purchase by PWFD. PWFD has taken the following steps to address the high TTHM levels:

- The amount of chlorine added to the water from time to time by PWFD has been reduced while still ensuring reliable bacteriological control.
- PWFD has requested Newport Water to modify its plant operations to the extent possible and permissible by regulations in an effort to minimize the production of DPBs.
- PWFD has requested Newport Water to conduct a comprehensive evaluation of the LV-WTP to determine what improvements are required to reduce TTHMs on both a short and long-term basis. Such a study by Newport Water is in the planning stages.
- PWFD has sought, and will continue to seek, the assistance of the Rhode Island Public Utilities Commission, the Rhode Island Department of Health

and the EPA to ensure that everything possible is being done to reduce the production of TTHMs.

- PWFD has retained a consulting engineer to investigate the possibility of re-treating the water purchased from Newport Water in order to lower the TTHM levels.

There are no other reasonable, immediate actions PWFD can take to reduce the level of DPBs in the water. However, PWFD's Administrative Board is committed to resolving the TTHM problem in the most expeditious manner possible.

PWFD is required to test for TTHMs on a quarterly basis. Based on the available information, it appears likely that the PWFD will be in compliance with the standard after the next quarterly measurement in July of 2003.

HOW DO I FIND OUT MORE ABOUT THE PROBLEM?

For more information, please contact William J. McGlinn, General Manager and Chief Engineer of the Portsmouth Water and Fire District at (401) 683-2090, or write to the Portsmouth Water and Fire District, 1944 East Main Road, P. O. Box 99, Portsmouth, RI 02871. For general information on TTHMs, you may also want to call the EPA Safe Drinking Water Hotline (800-426-4791) or visit the EPA web site at http://www.epa.gov/ebtpages/watedrinkingwater.html.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

The Newport (R.I.) Daily News, Wednesday, May 14, 2003

Town water fails test

■ Portsmouth's water fails to comply with EPA standards for the third straight quarter.

By Anne Kumar
Daily News staff

PORTSMOUTH — Water from the Portsmouth Water and Fire District has violated the federal Environmental Protection Agency's Safe Water Drinking Act for the third quarter in a row.

Water district customers will receive notices this week that the district is not in compliance with the EPA's total trihalomethane (THM) standard, which was reduced from 100 parts per billion to 80 parts per billion in January 2002. The standard is based on a four-quarter average. The district's average for the past four quarters is 83 parts per billion, according to district officials.

THMs are among the byproducts of chlorine — added to drinking water to control bacteria levels — reacting with organic material in the water.

General Manager and Chief Engineer William McGlinn said the average amount of THMs over the past three quarters is 65 parts per billion, well below the standard. But a higher-than-average amount of THMs in the second quarter of 2002 raised the year's average above the federal standard.

"We should be in compliance by July," McGlinn said, adding that the district is working with an engineer to correct the problem.

The district buys its water from the Newport Water Department, which owns and operates the Lawton Valley treatment plant in Portsmouth. Newport is studying both the Lawton Valley plant and the Station One plant in Newport. McGlinn said the amount of chlorine added to the water at both plants has been adjusted to help solve the problem.

Newport Public Works Director Julia Forgue said she is asking the Newport City Council to hire a consultant to conduct a compliance evaluation at both the Newport and Portsmouth plants. Newport was in compliance with drinking-water standards in the past quarter, she said.

Last year's dry spring and summer caused the high levels of THMs, McGlinn said. When the weather is dry, there is an increased amount of organic material in the water, which then reacts with the chlorine and creates THMs, he said.

"We don't expect to see that high a number this summer," McGlinn said. "But it's typical to have high numbers in the summer and lower numbers in the winter."

District officials said the violation does not pose an emergency or immediate risk and customers do not need to use an alternate water supply or boil their water. District testing has not shown any disease-causing organisms in the drinking water, officials said.

Portsmouth violated the same standard in 2000, McGlinn said, but it did not appear at that time that the problem would continue.

Water containing THMs above the standard, if consumed over many years, might cause liver, kidney or central nervous system problems in some people, according to the EPA. It might also increase the risk of cancer.

PWFD violates water regulations again

General manager says water is still safe to drink; district expects to be in compliance soon

PORTSMOUTH — For the third straight quarter, water from the Portsmouth Water and Fire District violated a drinking water standard.

District customers will receive notices this week reporting that the district is out of compliance with the Environmental Protection Agency's new Total Trihalomethane (THM) standard, which was reduced from 0.100 milligrams per liter to 0.080 in January 2002 and is based on a four quarter running average. The district's average for the last four quarters is 0.083 milligrams per liter (mg/l).

William McGlinn, the district's general manager and chief engineer stressed that there is no danger to water customers, though.

"This is not an emergency or immediate risk and district customers do not need to use an alternate water supply," Mr. McGlinn said. "Customers do not need to boil their water or take corrective action. None of the district's testing has shown disease-causing organisms in the drinking water."

Mr. McGlinn said that although the THM results for each of the three most recent quarters is below 0.080 mg/l, the four quarter running average exceeds the standard because of a high level measured in July 2002. The last three-quarters average out to 0.065 mg/l, but the third quarter of 2002 measured 0.137 mg/l.

Based on the available information, Mr. McGlinn said, it appears likely that the district will be in compliance when the next quarterly test in performed in July.

THMs are byproducts of the chlorine that is added to drinking water to eliminate disease-causing bacteria. Chlorine reacts with organic matter in the water and creates byproducts such as THMs.

According to the EPA, drinking water consumed over many years that contains THMs above the standard may cause liver, kidney, or central nervous system problems for some people. It may also cause an increased cancer risk.

The district buys all of its water from the Newport Water Department, which owns and operates the Lawton Valley Treatment Plant in Portsmouth.

In order to solve the problem, the district has reduced the amount of chlorine added to the water and asked Newport water officials to modify plant operations to reduce THM levels.

According to Joseph Magliocco, chairman of the administrative board, the district has also sought assistance from the Public Utilities Commission, the state health department and the EPA and they have hired a consulting engineer to look at solutions. Mr. Magliocco indicated that the district's administrative board is committed to resolving the THM problem as quickly as possible.

Notice to Portsmouth Water and Fire District Customers State Water System ID#: 1592022

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Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

Many water systems treat their water with a chemical disinfectant such as chlorine, in order to inactivate pathogens that cause disease. The public health benefits of chlorine disinfection practices are significant and well-recognized. One hundred years ago, typhoid and cholera were common waterborne diseases throughout American cities and disinfection was a major factor in reducing these epidemics. However, disinfection poses risks of its own. Since the discovery of DBPs in drinking water in 1974, numerous toxicological studies have been conducted that show some DBPs to be carcinogenic and/or cause reproductive or developmental effects in laboratory animals. In addition, epidemiological studies suggest that DBPs may be reproductive toxicants in humans under appropriate exposure conditions, however the epidemiological database remains sparse, and is not adequate to infer that a causal relationship exists for any specific by-product or outcome. While many of these studies have been conducted at high doses, the weight-of-evidence indicates that DBPs present a potential public health problem. Consequently, one of the most complex questions facing water supply professionals is how to reduce risks from disinfectants and DBPs while providing increased protection against microbial contaminants.

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PWFD has requested Newport Water to conduct a comprehensive evaluation of the LV-WTP to determine what improvements are required to reduce TTHMs on both a short and long-term basis. Such a study by Newport Water is in the planning stages.

PWFD has sought and will continue to seek the assistance of the Rhode Island Public Utilities Commission, the Rhode Island Department of Health and the EPA to ensure that everything possible is being done to reduce the production of TTHMs.

PWFD has retained a consulting engineer to investigate the possibility of re-treating the water purchased from Newport Water in order to lower the TTHM levels.

There are no other reasonable, immediate actions PWFD can take to reduce the level of DPBs in the water. However, PWFD's Administrative Board is committed to resolving the TTHM problem in the most expeditious manner possible.

PWFD is required to test for TTHMs on a quarterly basis. Based on the available information, it appears likely that the PWFD will be in compliance with the standard after the next quarterly measurement in July of 2003.

HOW DO I FIND OUT MORE ABOUT THE PROBLEM?

For more information, please contact William J. McGlinn, General Manager and Chief Engineer of the Portsmouth Water and Fire District at (401) 683-2090, or write to the Portsmouth Water and Fire District, 1944 East Main Road, P.O. Box 99, Portsmouth, RI 02871. For general information on TTHMs, you may also want to call the EPA Safe Drinking Water Hotline (800-426-4791) or visit the EPA web site at http://www.epa.gov/ebtpages/watedrinkingwater.html.

Chemicals in Portsmouth's water not meeting standards

BY KATE BORGUETA
Newport Voice Staff

The water Portsmouth purchases from Newport may be in violation of regulations outlined in the Safe Water Drinking Act when results from the fourth quarter 2002 are analyzed later this year, according to William J. McGlinn, general manager and chief engineer for the Portsmouth Water and Fire District.

"We're having problems with the test results," McGlinn said. "We really won't know until after the fourth quarter tests are done if they are meeting standards. We may have trouble with compliance."

In the last few quarters of regulated water testing, officials have recorded high levels of trihalomethane (TTHM), a byproduct of drinking water disinfection said to cause liver, kidney or central nervous system problems and an increased risk of cancer.

In 1996 Congress passed stringent amendments to the Safe Drinking Water Act. Among them was a stipulation that, beginning Jan. 1 of this year, the nation's water supplies contain less than 80 parts per billion (ppb) of TTHM, up from 100 ppb under previous regulations.

In Portsmouth, the TTHM average for the third quarter of 2002 was 137 ppb, hiking the four-quarter running average up to 96.7 ppb. That level has been steadily rising, according to official test results. For the second quarter of 2002, the TTHM average was 92.3 ppb, for a four-quarter running average of 76.6 ppb, and in the first quarter of 2002 the TTHM average 60.9 ppb, for a four-quarter running average of 60.9 ppb.

"If the fourth quarter results are similar to the second or third quarter, PWFD may be in violation of the 80 ppb standard after the fourth quarter," McGlinn wrote in a Sept. 6 letter to June Swallow, chief of the state Department of Health's division of water quality.

Portsmouth does not currently maintain its own water treatment plant and purchases about 450 million gallons of treated water from Newport annually. McGlinn said that if the TTHM levels are above current standards for 2002, "Newport will have to treat its water differently," but added that he couldn't "speak for their system."

Julia Forgue, director of Newport's public works department, did not return several phone calls.

The Portsmouth Water and Fire District samples water quality at four sites around the town, including Roger Williams University residence and conference center, the Portsmouth Fire Department, the Lawton Valley treatment plant and a residence on Braman's Lane.

According to the city of Newport's 2001 consumer confidence report on water quality, the level of TTHM at Station 1 in Newport and Lawton Valley in Portsmouth ranged from 20.7 ppb to 125 ppb throughout 2001. The average for the year at both plants was 78.6 ppb.

The Portsmouth Water and Fire Department compiles official reports using an average of all the sites tested and then keeps a running average from the previous four quarters. In two to three years, however, EPA standards are set to change again, and will require that each site keeps its own numbers. Additionally, water systems will be required to find the highest levels of contaminants throughout a system and use those sites for sampling.

McGlinn said that byproducts such as TTHM develop over time, as water is disinfected with chlorine. And science community is divided over the actual health risks of TTHM. Some studies have indicated that long-term exposure to high levels of TTHM presents a high risk of cancer.

"The EPA balances that with the public benefit of having chlorine in the water supply," McGlinn said. Using chlorine to disinfect water has helped the nation to control diseases such as cholera. But additional research has suggested high TTHM levels may also cause miscarriages in pregnant women.

"There is always more and more research being done," McGlinn said.

When a water system violates a drinking water regulation, it must notify the people who drink its water about the violation, what it means and how they should respond, according to EPA regulations. Notices may be sent in the mail, included on a bill or, when the water presents an immediate health threat, will be broadcast through television, radio and newspapers.

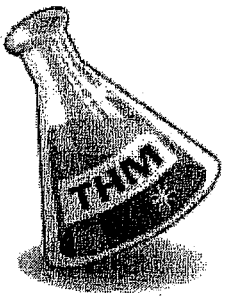
If a water system consistently sends to consumers water that contains a contaminant at a level higher than EPA or state health standards, the system is violating regulations and is subject to fines and other penalties, according to the EPA. Each water supplier's annual water quality report must include a summary of all the violations that occurred during the previous year.

EXHIBIT 10

INFORMATIONAL NEWSPAPER ARTICLES ON TTHM PROBLEMS AND LAWSUITS IN CHESAPEAKE, VIRGINIA

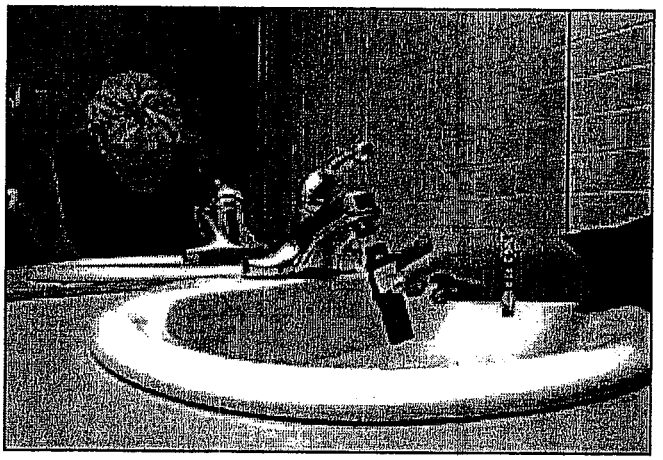
February 12, 2001

Something in the Water: Chesapeake takes a calculated risk



By JENNIFER PETER

About this report: Chesapeake allowed a sharp increase in a water contaminant linked to miscarriage. While the water is safe now, a threatened lawsuit has raised questions about government secrecy and the public's health.



Chesapeake bacteriologist Martha Durant collects water from a restroom in the Greenbrier Library on Volvo Parkway. The city tests for THM at about 20 sites each quarter. The timing and calculation of the samples may obscure true levels of the contaminant, a Virginian-Pilot investigation shows. More photos.

Photo by Steve Earley / The VirginiarPilot.

In March 1998, Chesapeake's health director warned pregnant women to be cautious about drinking their tap water until the city's new state-of-the-art treatment plant was completed.

The problem was THM, a common contaminant

WHAT IS THM?
THM is trihalomethane, an organic chemical compound. It is created when chlorine, which is used to disinfect water, mixes with organic materials, such as leaves and algae, in open-air water sources. Chesapeake's Northwest River contains unusually high levels of organic materials.

THE HEALTH RISKS
Long-term: In the 1970s, scientists determined that decades of exposure to water with high levels of THM can lead to greater risk of bladder and rectal cancer.
Short-term: In 1998, a study suggested that short-term exposure could lead to a greater risk of miscarriage.

created when chlorine mixes with twigs, leaves and other organic matter.

The potential new danger, highlighted by a recent study, was every expectant mother's nightmare: miscarriage.

What city officials resisted telling residents was that Chesapeake's main water supply, the swampy Northwest River, was more prone to producing THM than most other drinking water sources in the country.

They also failed to mention that they had recently allowed THMs to spike to potentially dangerous levels by removing two treatment towers, whose sole purpose was to combat THM. The city proceeded with its long-scheduled and state-approved plans to take down these towers the day after news broke nationwide about new evidence of THM health risks.

Chesapeake's lack of candor was standard procedure. According to city and state records, Chesapeake officials have historically viewed the disclosure of drinking water problems as a public relations headache -- to be avoided if possible.

Whether the city's conduct amounted to legal negligence could soon be decided in court.

At least seven Chesapeake women who had miscarriages or other pregnancy complications in 1997 and 1998 believe the city "poisoned" them with THM, or trihalomethane, according to letters sent to the city. These letters announce their intention to sue.

If the case goes to court, Chesapeake will be able to wield several powerful facts in its defense:

The city, which has fixed its THM problem, has never been in violation of state or federal THM regulations. The science linking THM to the short-term risk of miscarriage is inconclusive. Chesapeake's miscarriage rate, which is difficult to accurately assess, did not increase in 1998. Miscarriages are extremely common and are nearly impossible to trace to any one factor.

MORE

Keeping secrets: City officials have tried to avoid public disclosure of water problems

Timeline: Events related to THM problems in Chesapeake

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Photos: Testing the water

Across Hampton Roads: Other cities encounter fewer THM problems

Map: A graphic look at THM levels at 21 Chesapeake testing sites

Part 2 of this report

A broader question remains, however, about whether the local, state and federal government adequately protected Chesapeake citizens over the past 20 years.

A Virginian-Pilot analysis of THM research, federal regulations, and city and state water records obtained through the Freedom of Information Act reveals that:

- A decades-old federal law, which was designed to protect the public from the contami-nant's long-term cancer risks, has not been adjusted to reflect mounting evidence that THM may be a short-term reproductive toxin.

- Chesapeake, with the approval of the state health department, tests for THM in a way that minimizes high readings. Chesapeake takes two of its four annual samples in December and January, when the contaminant's levels are lowest.

- Until recently, sections of the city, including parts of Deep Creek, Greenbrier, Western Branch, Great Bridge and South Norfolk, consistently registered THM levels well above the city average, potentially placing residents there at greater risk. The city did not disclose these individual levels to the public and was not required to under state and federal law.

- The city's THM problems did not end -- as promised and reported by the city -- when the new Northwest River Treatment Plant went on line in June 1999. While the new plant did reduce THMs in the city's main water system, levels in the South Norfolk and Western Branch systems, which receive water from other sources, rose high into the danger zone as recently as this summer. The levels there have since subsided.

- City officials did not fully support the Chesapeake health director's decision to warn pregnant women about THM.

A history of problems

Chesapeake has been grappling quietly with the THM in its water for 20 years.

The contaminant forms when decaying plants, algae and other organic material mix with chlorine, the magical disinfectant that has wiped out water-borne killers such as cholera and dysentery.

Most cities relying on lakes and rivers for their drinking water have some level of THM in their system. The problem is compounded in Chesapeake, which draws from the brackish, nearly stagnant waters of the Northwest River.

The 28-mile river runs from the Currituck Sound in North Carolina through the city's southernmost region and into the Great Dismal Swamp. It is bordered on nearly all sides by swampland and trees. Rotting leaves, tree limbs and other organic matter decompose and litter the river's bottom, giving it a dark hue.

City officials have known for decades that the river is a fertile breeding ground for THM.

"Due to the naturally occurring high concentration of organics in the Northwest River, THM levels in our . . . system are among the highest in the country," then-City Manager John T. Maxwell wrote in a 1983 letter to the Environmental Protection Agency.

At that time, the city was racing to meet new federal THM limits, established after scientists determined that 70 years of exposure could increase the risk of bladder and rectal cancer.

As of November 1983, water systems were required to maintain a running annual average of 100 parts per billion or less. This was measured by taking samples from across the system each quarter, averaging them together, and then averaging that number with the results from the three previous quarters.

A year before the 1983 deadline, the city's running average was 250 parts per billion -- more than twice the limit. Officials scrambled to find a quick fix and to fend off a violation, which would have required them to inform the public about the problem.

According to numerous internal memos, avoiding such disclosure was one of the city's top priorities.

"Chesapeake may be able to avoid public notification if a short-term solution is implemented immediately," Chesapeake Public Utilities Director Amar Dwarkanath wrote in an April 15, 1983, letter to Maxwell. "The value associated with the avoidance of THM notification is an intangible benefit, the value of which is hard to assess."

This emphasis, Dwarkanath said recently, did not stem from a desire to delude the public or a lack of concern for its health. Instead, he said, the city simply wanted to do its job.

"Public notification happens when you don't comply with the standards," Dwarkanath said. "It's like going to school and getting an F. Public notification means you didn't succeed."

The city succeeded in reducing the THM in its water supply to exactly 100 by the 1983 deadline by treating the water with chlorine-dioxide -- the short-term solution mentioned by Dwarkanath. The long-term solution was the 1985 construction of two so-called "air-stripping" towers, which blew THM particles out of the water as part of the treatment process.

Measurement flaws?

With these towers in place, Chesapeake's water supply remained within the legal limits for the next 15 years. But the way Chesapeake monitored its drinking water may have masked the actual levels.

The Pilot's review of federal testing standards and the city's measuring methods reveals that certain parts of the city -- without citizens' knowledge -- have received water with THM levels far higher than the average reported to the state.

The federal code states that samples "for total trihalomethanes shall be performed at quarterly intervals," which would presumably mean every three months.

Chesapeake, however, often allows four or five months to elapse between sampling, generally skipping the hot summer months when THM levels tend to be the highest.

The city also usually takes samples in December -- at the tail end of the fourth quarter -- and then another about a month later, in January, at the beginning of the first quarter of the next year.

THM levels are lowest during the winter.

When asked about the December-January samplings, Daniel B. Horne -- a regional water regulator with the state health department -- acknowledged there might be a problem.

"That's a good question and probably one that needs to be addressed," he said.

Dwarkanath denied the timing was an attempt to skew the results.

Another way THM levels in Chesapeake may have been obscured is by giving equal weight to major and minor water sources. Because of the way the federal regulations are written, a small source with very low THM levels counts just as much as a major source with very high THM levels.

For instance, in September 1998, the four sampling points for the Northwest River plant, which provided about 8.5 million gallons a day that quarter, averaged a sky-high 170 parts per billion. The Western Branch well, which contributed about 1.2 million gallons a day to the Northwest system, averaged just 27 parts per billion.

These two results were given equal weight in the averaging, despite the fact that most of the 75,971 residents in the Northwest River system were receiving the high-THM water.

Stig Regli, an engineer with the Environmental Protection Agency, said this statutory flaw violates the spirit of the law, which was designed to take "representative" samples of the water people drink.

"There is a problem of unequal weights which the existing rule does not address," he said.

The systemwide averages are the only numbers used to determine whether a system is complying with federal law -- and they are the only ones made public. That means residents living in the high-THM

zones have no idea of the danger that might be lurking in their water.

The THM level is higher at some points than others because the contaminant continues to grow as the water travels through the distribution system. Therefore, the farther residents live from the water source, the higher the THM is likely to be at their tap.

For instance, in September 1995, the Northwest River system registered a quarterly THM level of 78 parts per billion, well below the federal annual standard of 100 parts per billion. However, water samples from Greenbrier Library on Volvo Parkway -- which is part of the Northwest system -- registered 140.

Other high-THM sampling points were the 7-Eleven store at 841 Canal Drive, the Chesapeake Health Department, Deep Creek Library, Fire Station No. 4 at 101 Lenore Drive and Fire Station No. 2 on Freeman Avenue.

Since 1987, each of these individual sites has had an average THM level greater than 75 parts per billion.

While all of the city's sampling results for individual sites are public information and available upon request, they have not been made available to the public voluntarily .

The averaging process, which is required by federal law and overseen by the state Department of Health, is the same in each South Hampton Roads city. Virginia Beach and Norfolk have also clustered their measurements in December and January. None of the cities, however, has had as much trouble with THM as Chesapeake.

Continued ...
The bombshell hits, health risks are revealed

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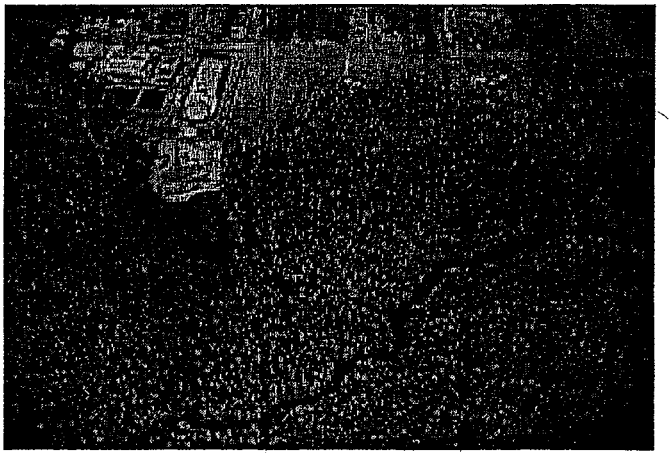
February 12, 2001

The bombshell hits with news of miscarriage risks

By JENNIFER PETER

(... continued from Part 1)

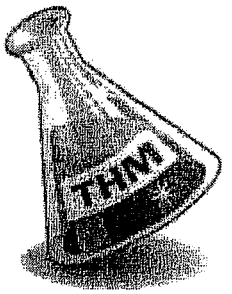


An aerial view of the Northwest River, surrounded by swamp and trees, shows just how susceptible the water is to organic material. The treatment plant is at top. More photos. Photo by Vicki Cronis / The VirginianPilot.

In 1995, after 12 years of meeting federal regulations, city officials -- with the approval of state health regulators -- decided to take a calculated risk.

They were in the midst of designing a new $75 million treatment plant that would purify the city's often-brackish water, long the subject of citizen complaints and bad press.

The plant's state-of-the-art filters would rid the water of its salty taste and strong odor, which was especially noticeable during summer dry spells. They would also dramatically reduce the THM levels.



Something in the Water: Chesapeake takes a calculated risk

MORE

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Across Hampton Roads: Other cities encounter

As part of the plant's design, city officials and state regulators agreed that two treatment towers would be removed about nine months before the new filters began to operate. The towers were the city's main defense against THM.

The plan called for using the part of this THM treatment system for another purpose in another part of the plant construction. This engineering would save the city money but would likely send the THM levels skyrocketing in 1998.

In 1995, when this decision was made, the prime THM risk was still thought to be cancer, stemming from decades of exposure. In that context, officials figured, what harm could a few months of high THMs do?

Two years later, they got their answer.

"BOMBSHELL ALERT!!"

That was the headline on the inter-office memo Horne, the regional water regulator, wrote to his boss at the Virginia Department of Health in September 1997.

He had just heard a rumor about a soon-to-be-released California study showing an increased risk of miscarriage when a water system has a quarterly THM average greater than 74 parts per billion.

Chesapeake's quarterly THM averages had routinely exceeded that level. Some sampling stations in the city's system had THM levels nearly twice that high.

The study found that pregnant women who drank five or more glasses of cold high-THM water during their first trimester were twice as likely to have miscarriages -- also known as spontaneous abortions -- as those who drank the same amount of low-THM water.

Not only was this a lower threshold for danger than previously believed, but the study suggested the damage could be done over a matter of months rather than 70 years.

Previous studies had tentatively linked THM to miscarriages and other reproductive problems, such

fewer THM problems

Map: A graphic look at THM levels at 21 Chesapeake testing sites

Part 1 of this report

as spinal defects and growth retardation, but this was considered the most definitive to date. Partially funded by the EPA, it was conducted by the California Department of Health Services.

"One study is very rarely considered a showing of cause and effect," said Kenneth Cantor, an epidemiologist with the National Cancer Institute in Bethesda, Md. "But this was a very well-conducted study that raised a lot of questions."

Suddenly, city and state officials were faced with a difficult decision. Should they immediately tell the public of the possible danger and risk a panic? In the absence of definitive proof, should they risk shaking the public's confidence in an essential city service?

On the other hand, did they have an obligation to inform women of an increased risk from THM, even if the water officially complied with federal regulations? Was there a broader ethical standard beyond the legal?

To Dwarkanath, the city's public utilities director, the answer is straightforward and technical.

"We're given a federal standard and either we're above or below," Dwarkanath said. "We rely upon the government to set the standards. And then we try to meet them. As an engineer, I can't make health decisions. But as soon as I became aware of the study, I told everyone."

To others, such as Chesapeake's health director, the question is more troublesome.

"I was in a bit of a quagmire," said Dr. Nancy M. Welch, a state employee who ultimately issued the public notice after receiving a copy of the study from Dwarkanath. "From a scientific perspective, I didn't want to jump to conclusions. But here I had a study in my hands that certainly implied that it could impose a potential risk. I felt we had to include that information."

The state health department first informed the city about the study in November 1997.

The news broke nationally on Feb. 10, when the Los Angeles Times wrote a front-page story on the

study. A copy of this story was faxed to the city of Chesapeake, according to records.

Chesapeake's Deputy City Manager Clarence V. Cuffee immediately informed the City Council about the possible THM-miscarriage link. In a memo, he emphasized that the city's water met federal THM standards and that the new plant, once completed, would reduce levels further. Without having seen the study, he downplayed its validity.

"California state and federal officials have stated that the study is not definitive," Cuffee wrote. "Amar Dwarkanath has discussed this article with Dr. Nancy Welch and she is of the opinion that one study does not make it definitive."

His memo to the council did not disclose that the next day the city would tear down the towers and send THM levels soaring.

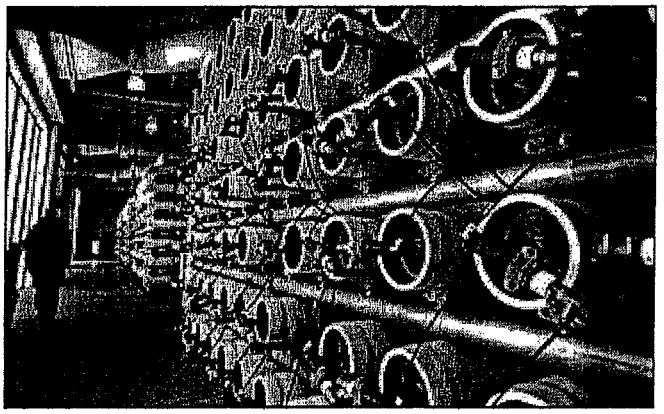
"The plant was about three or four months behind schedule," Dwarkanath said, "and those towers had to come down."

The impact was immediate.

On Feb. 6, five days before the towers were taken down, the water leaving the plant registered a THM level of 67.5 parts per billion.

By Feb. 12, the day after the towers stopped operating, the THM level had risen to 119.6. This immediate measurement would dip below 100 on just 12 days through the end of 1998. The average level during that period was 138 parts per billion.

Health risks revealed



Filtering units at the upgraded Northwest River Water Treatment Plant have successfully reduced THM levels in that water system. During part of the upgrade, however, some Chesapeake residents were exposed to higher levels. Photo by Mark Mitchell / The Virginian Pilot.

By late March 1998, Welch had determined there was no excuse not to inform the public. The potential risk was so great, she figured, and the solution so easy: Women could avoid danger by boiling water for a minute and then letting it cool before drinking.

Although she is the city's health director and receives part of her funding from Chesapeake, Welch officially works for the state department of public health. She and Horne work for different sections of the agency and operate independently of one another.

Welch said she learned of the city's elevated THM levels when it asked the state health department for permission to be exempted from the federal standard until the new plant opened for business.

"The city applied for the exemption and they had to come and get a letter from me."

The state, with her support, approved the waiver, allowing the city to violate the THM standards until construction was complete.

Still, Welch was concerned.

After consulting four epidemiologists, who confirmed that the California study was scientifically sound, Welch decided that the public needed to be informed.

On March 31, she issued a public health notice to obstetricians, gynecologists and the media.

"Because of the timing and the potential for damage, I thought we had to do something," Welch said. "In my medical judgment, I would have found it professionally difficult not to share this information."

Chesapeake leaders now point to the notice as a sign of their desire to protect the public health. But records show that city officials were reluctant to support it and were actually caught off guard when it came out.

That night, there was a flurry of phone calls and e-mails between Dwarkanath, Horne and other Hampton Roads public utilities officials.

"The issue of spontaneous abortions related to (THMs) is about to raise its ugly head here," Horne wrote in an e-mail to his Richmond boss, sent just before midnight.

After Welch's bulletin went out and The Virginian-Pilot wrote a front-page story about the risk, the city published a "Public Notice of Potential Health Risks for Pregnant Women," which was sent to every Chesapeake household.

Dwarkanath later wanted to discourage Welch from submitting an opinion article on THM to the editorial page of The Virginian-Pilot.

"I suggested to (Assistant City Manager) Anne (Odell) that they try to get Nancy W. to not submit this editorial," Dwarkanath wrote on April 16.

Attempts to persuade Welch to change her mind about the need for a public notice were unsuccessful, even after the American Water Works Association called the study preliminary and inconclusive.

"I don't think it will make a difference," Dwarkanath wrote in an e-mail to Odell. "I had brought those points to Nancy Welch's attention, and she has dug into her position on this issue."

Another hint of their exasperation seeped through in

April, when the warning was expanded to cover the city's Western Branch and South Norfolk water systems. Horne called the city and left a message with Ray Prophett, one of Dwarkanath's assistants.

"He said Dr. Welch has done it to us again," Prophett wrote in a phone message, obtained through FOIA, to Dwarkanath.

The city issued an official public notification in July as a condition of receiving the state's approval of the THM waiver. The notice, which was published as a display advertisement in the Chesapeake Clipper, a biweekly distributed by The Pilot, and sent to customers with their bills, did not mention the miscarriage risk.

Despite the recent study, the notice stated that "state health officials have determined that granting this temporary exemption will not result in any unreasonable risks to the consumer's health."

Chesapeake's reticence to publicize its THM woes is perfectly understandable, Horne said.

"That's part of the mindset of utilities," he said. "If anything's slightly off, people will jump to the conclusion that the system has failed."

Horne pointed out that the city never violated the federal THM standard while the towers were out of service. For this reason, he believes -- in retrospect -- that warning pregnant women of the potential risks was unnecessary.

A pattern of secrecy?

To Ana Garcia Pruitt, Wendy Leigh Trotter, Julie Collier Schuller, Shannon K. Ward, Autumn M. Ulrich, Kimberly R. Reid and Renee Washington, the city's delay in disclosing the health risks could have been a life and death issue.

Each lived in Chesapeake in 1997 or 1998. Each was pregnant. And each saw her pregnancy end in miscarriage or -- in Schuller's case -- a serious birth defect. And each has informed the city that she intends to sue.

Although they decline to comment on their impending lawsuit, they presented their argument in letters sent to the city in October.

"Instead of attempting to adequately warn . . . the public," each letter says, "Chesapeake intentionally failed to disclose relevant facts."

That alleged pattern of secrecy continued this year when the city's other water systems, Western Branch and South Norfolk, both had quarterly and annual averages higher than the level deemed to be safe by the California study.

South Norfolk, which is fed by the Norfolk water system, had a quarterly average of 137 in July and an annual average of 101. Western Branch, which receives water from the Portsmouth system, had a quarterly average of 138 in August and an annual average of 83.

Despite the high levels, neither city nor state health officials informed pregnant women living there of the high THM readings and the possible danger, as they had in 1998. The 1998 notice had officially expired in June 1999, when the new plant opened.

Why the inconsistency?

"We're relying on people's memories," Horne said, referring to the 1998 public notice.

Dwarkanath says that it's Welch's responsibility to safeguard citizens' health.

"As an engineer, I can't make that decision. As long as we obtain 100 or below, we have met our goal."

Welch said, however, that she does not routinely monitor the THM levels and does not know they are high unless the city tells her -- which it didn't.

"My assumption is that everything's fine because he (Dwarkanath) does the THM monitoring."

Pinning blame

In the summer of 2000, two local law firms -- Joynes & Gaidies Law Group and Willcox &

Savage -- jointly aired television promotions seeking Chesapeake women who had recently had miscarriages.

More than 400 women responded, including the seven who have announced their intent to sue the city. These women could have a tough time pinning blame.

Chesapeake's miscarriage rate did not rise in 1998, according to Virginia Health Statistics, and it has not been outside the norm before or after. The miscarriage rate per 1,000 women of child-bearing age -- at 5.9 -- was lower than the 1997 rate of 7.6.

City and state officials are quick to point this out.

"We actually had higher miscarriage rates before the THM levels went up," Welch said.

The national miscarriage rate is about 10 percent, according to medical experts, and the causes are myriad and often mysterious.

Most occur within the first 12 weeks of pregnancy because of random growth abnormalities in the fetus. A mother's physical problems, disease or family history can also increase the risk.

Women over age 35 are more likely to miscarry as are women who have had prior miscarriages.

Theories have linked various foods and habits to miscarriages, but the most certain culprits are alcohol, smoking and caffeine.

Because of this, many doctors say, it would be impossible to trace any one miscarriage back to THM -- especially when the science is still so preliminary.

"If this had been a significant factor, you would have seen a significant increase in the rate," said Dr. Willette L. LeHew, a local obstetrician-gynecologist.

But Dr. Shanna H. Swan, who helped conduct the California study, cautioned against using the reported miscarriage rate to prove anything. Many are not reported and sometimes they occur before

the woman even knows she's pregnant.

When women miscarry, the hospital or doctor who treated them is supposed to report this to the Virginia Department of Health's Center for Health Statistics. Doctors, however, do not always do this. In addition, some women don't seek medical attention.

"I would be suspicious of any statement about that unless a thorough study has been done," Swan said. "Miscarriages are just not well-reported."

The California study and previous studies linking THM to reproductive problems have prompted the EPA to tighten up the THM law.

By next January, Chesapeake -- and any other water provider serving more than 10,000 people -- will have to maintain an annual average of no more than 80 parts per billion. With its upgraded plant, the Northwest system should easily meet this goal.

The Western Branch and South Norfolk systems, whose THM levels have receded since Portsmouth and Norfolk began using a new treatment last fall, should also have no trouble complying.

In mid-2005, the EPA -- in response to new information about THM -- will eliminate the systemwide averages and require utilities to meet a certain THM standard at each of its sampling points. This will help ensure that all parts of the system are receiving safe water.

"We don't know how significant the risks are, if they are there at all," the EPA's Regli said. "But it was discussed and recognized as a piece of evidence. And it was considered a fairly good study."

The EPA is also helping to fund a major new study designed to test the theory that THM exposure leads to a greater chance of miscarriage.

Dr. David A. Savitz, chairman of the epidemiology department at the University of North Carolina, is conducting the study, which will analyze the water-drinking habits of 1,000 newly pregnant women in three communities around the country. The results should be available in about three years.

"We hope it will make the decision-making process more rational," said Savitz. "We hope it will help those who have to make judgments."

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February 12, 2001

Keeping secrets: Officials try to avoid water problems exposure

Chesapeake officials have historically tried to avoid public disclosure of water problems, records show. For example:

APRIL 15, 1983:

Public Utilities Director **Amar Dwarkanath,** pictured, in a memo to City Manager John T. Maxwell: "One of the goals for the (THM) control program was to take appropriate measures if possible to avoid public notification. ... The value associated with avoidance of THM notification is an intangible benefit, the value of which is hard to assess."

MAY 5, 1983:

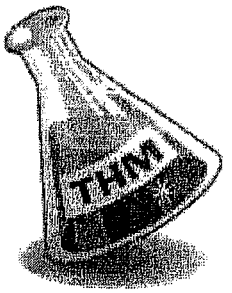
State health regulator Daniel B. Horne in a letter to Chesapeake's THM consultant: "One of the city's prime considerations in the entire procedure is that of avoiding public notification."

AUG. 17, 1983:

City water production administrator H.C. Hendron in a memo to Dwarkanath, responding to his concern about high levels of coliform in the water: "We are aware of the extreme seriousness of this matter ... and have already initiated a program to circumvent public notification."

MAY 21, 1999:

Notes from a meeting between city and regional water officials about high fluoride levels in a well that serves some residents in the Northwest River System: "Chesapeake indicated they do not want to



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Part 1 of this report

Part 2

do public notification no matter what."

WHAT CHESAPEAKE SAYS ABOUT NOTIFICATION: The city wanted to avoid public notification, Dwarkanath says, because cities are only required to go to public notification when they are not in compliance with standards. "Public notification means you didn't succeed."

April 3, 2001

15 women sue Chesapeake over THM in water

By LOU MISSELHORN

• Special report: THM in Chesapeake's water

CHESAPEAKE -- Lawyers for 15 women filed lawsuits against the city Monday, claiming Chesapeake's water caused them to have miscarriages in the late 1990s.

At least 50 other lawsuits are expected to be filed, including several alleging that the water caused children to be born with birth defects, according to the women's lawyers.

The nearly identical lawsuits, which together seek more than $100 million, say that the city ``knowingly, recklessly, wantonly, and/or negligently poisoned the Plaintiff and her unborn child" when the women drank, showered, bathed in or used city water containing trihalomethanes -- or THM.

THM forms when chlorine, used as a disinfectant, mixes with organic material such as algae and leaf particles, which are abundant in Chesapeake's Northwest River -- the city's primary source for drinking water.

Long suspected to be a carcinogen, THM was revealed as a possible miscarriage risk in early 1998.

High THM levels from the river water subsided in

1999, after the city opened a new treatment plant that filters out most of the particles.

Through a spokesman, lawyers earlier this year accused the city of manipulating test results and schedules to stay within the federal THM standards.

City Attorney Ronald S. Hallman said Monday that the city disputes the allegations and that Chesapeake has stayed within the federal rules.

``We've emphasized that the city has been in compliance with state and federal regulations," Hallman said. ``Their lawyers have misread the data."

The women's lawyers, the Joynes & Gaidies Law Group and Willcox & Savage, do not expect the lawsuits to come to court until sometime in 2002.

The lawsuits say the city knew about presence of THMs in its water, as well as the risk, in the early 1980s and likely earlier but didn't issue any warnings until the spring of 1998.

Even then, the lawsuits claim, the warning was not sufficient, and the city should have provided bottled water for the pregnant women.

The city could have disinfected its water using other methods but decided to remain with chlorine, according to the lawsuits.

``The city refused to make available to the public accurate and complete data," the lawsuits say. ``This fraudulent and intentional cover-up caused many residents . . . to remain unaware of the THMs . . . and the dangers these toxins pose."

Thirteen women who have had one miscarriage each are seeking $5 million in compensatory damages and $1 million in punitive damages apiece. One woman had two; she is asking for $11 million. One woman who has had three miscarriages has asked for $16 million.

The damages cited in the lawsuits include pain, trauma, suffering, emotional and psychological distress, the loss of an otherwise viable and healthy baby, medical bills and worry.

Reach Lou Misselhorn at 222-5201 or e-mail lmisselh@pilotonline.com

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